

NYSE UGW Binary Gateway Specification

NYSE Arca Options
NYSE American Options

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Table of Contents

1 Overview	5
UGW Binary Certification	5
System Architecture	6
2 NYSE UGW Binary Gateway Overview	7
Trading Times	7
Hours of Operation*	7
Trading Session IDs	7
Common Identifiers	7
Company Group ID	7
Option Symbolology	8
Order Management	8
Automatic Order Cancellation on Disconnect	8
Bulk Cancel by TPID	9
NYSE Arca/American Options Self Trade Prevention Information	9
Display Price Update Acknowledgement (Optional) - for Re-Pricing PNP & Re-Pricing ALO Orders	10
Give-Up Functionality	11
Local and Away Market Maker Identification (NYSE Arca & NYSE American Options)	11
Binary Prices	11
Price Scale Codes	11
Message Formatting	12
Message Type Summary	12
3 Session Management	15
Overview	15
Disconnects	15
Session Throttle	15
Logon Message Variants (and Logon Accepted)	16
Logon Message – Variant 1	17
Logon Message – Variant 2	19
Logon Accepted Message	22
Logon Reject Message	22
Test Request Message	23
Heartbeat Message	23
4 Application Messages	25
D = New Order Message (Variant 2)	25
D = New Order Verbose Format Message (Variant 3)	29
D = New Complex Order Message - Options (Variant 4)	33
D = New Complex Order Message (complex symbol) - Options (Variant 5)	37
F = Order Cancel Message (Variant 1)	41

F = Complex Cancel Request (Variant 2)	43
G = Order Cancel/Replace (Variant 1).....	44
G = Order Cancel/Replace Verbose (Variant 2)	46
G = Fast Cancel/Replace Message Options (Variant 3)	50
G = Complex Order Cancel/Replace (Variant 5).....	52
G = Complex Cancel/Replace Message (Using complex symbol) - Options (Variant 6).....	54
G = Complex Fast Cancel/Replace Message (Using complex symbol) - Options (Variant 7)	56
6 = Cancel Request Ack Message (Variant 1)	57
4 = Order Killed Message (Variant 1)	58
E = Cancel Replace Ack Message (Variant 1).....	59
5 = Order Replaced Message (Variant 1)	60
8 = Order Cancel/Replace Reject Message (Variant 1)	61
C = Bust/Correct Message (Variant 1).....	62
a = Order Ack Message (Variant 1)	63
2 = Order Fill Message (Variant 1)	64
2 = Execution Report Verbose Format (Variant 2).....	65
How to interpret the Verbose Execution Report (Variant 2)	69
2 = Complex Execution Report Format (Variant 3)	69
How to interpret the Complex Execution Report (Variant 3)	72
2 = Options Cross Execution Report (Variant 4).....	72
B = Order Cross (Options) – Single (Variant 1)	74
B = Order Cross – Complex (Variant 2).....	79
B = Order Cross – Complex (Using Complex Symbol) - (Variant 3).....	83
J = Allocation (Options) - Variant 1	87
P = Allocation Ack (Options) - Variant 1	90
<i>R = New Complex Symbol Request (Complex) - Variant 1</i>	<i>91</i>
<i>r = New Complex Symbol Ack (Complex) - Variant 1</i>	<i>92</i>
5 Risk Mitigation (Options)	94
Risk Mitigation Types	94
Risk Mitigation – Per Underlying Symbol.....	95
Risk Mitigation – Firm Level (All Underlying Symbols for a TPID).....	96
Risk Mitigation Breach Event.....	97
Update Risk Limits & Re-Enable Order Entry	97
Gateway Session Disconnects	98
Global Risk Mitigation.....	98
X = Risk Mitigation Request Message (Options) - Variant 1	99
x = Risk Mitigation Request Ack (Options) - Variant 1	100
7 = Risk Mitigation Alert Message (Options) - Variant 1.....	101

6 NYSE Arca Options Order Types	103
7 NYSE American Options Order Types.....	108
Appendix A: Liquidity Indicator Values and Definitions (NYSE Arca & NYSE American Options)	112
Appendix B: Reject Codes	114
Appendix C: Exchange Destinations (ExDestination).....	115

1 Overview

UGW Binary is a messaging interface to send order flow to the NYSE Arca exchange. The protocol is designed to reduce bandwidth and reduce latency with small messages that are easier to parse. The protocol uses fixed length messages over TCP/IP. The contents of fields are binary and fixed length ASCII values where binary values are in network Endian (Big Endian) format. Session behavior, field names, and field contents were designed to follow FIX behavior as closely as possible.

UGW Binary Certification

Testing is currently manual. Each firm must certify their applications with NYSE Arca. To schedule a test, please call the Connectivity hotline at 212-896-2830, Option 2, Sub-Option 2 or email FirmTesting@NYSE.com.

Other Contacts

The NYSE Market Support teams have a centralized phone number: +1 212-896-2830. Through this number, clients are able to reach all support contacts for Trading, Technical, Market Data and Client Relationship Services. Below are the options to quickly get you to the most appropriate team.

+1 212-896-2830

Option 1 - Trading Support

- Sub-Option 1 - NYSE/NYSE American Equities
- Sub-Option 2 - NYSE ARCA Equities / NYSE Bonds
- Sub-Option 3 - NYSE Options

Option 2 - API Connectivity/Order Routing Support

- Sub-Option 1 - Production support
- Sub-Option 2 - UAT support

Option 3 - SFTI Network Operations and Colocation Support

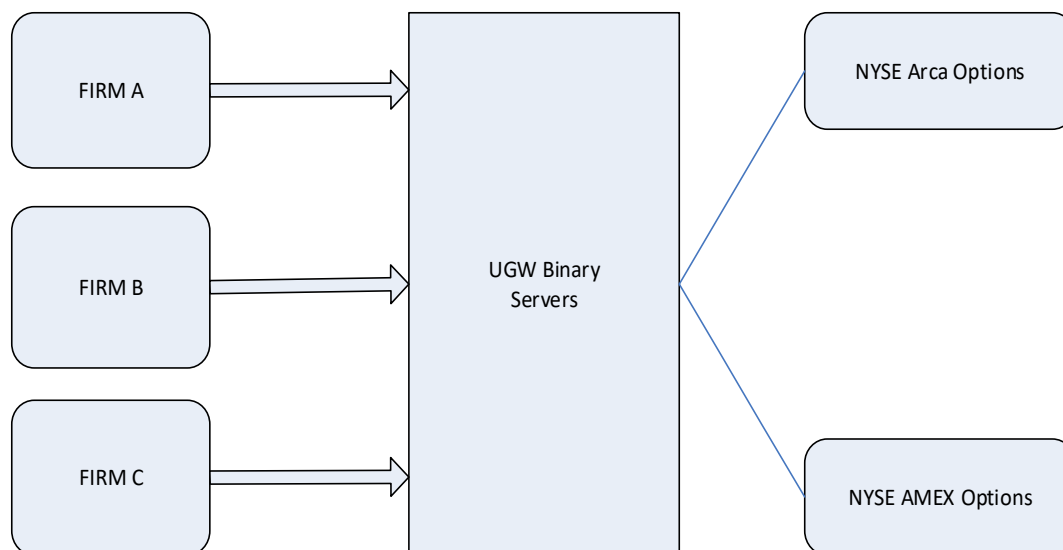
Option 4 - Market Data Support

Option 5 - Client Relationship Services

Option 6 - Other technical support inquiries

System Architecture

Each client will be required to establish one or more connections to route messages to their designated Trading Platform. Each Trading Platform will require independent connections each with their own assigned IP and Port address. The Gateway then routes the messages to the appropriate Trading Engine.



2 NYSE UGW Binary Gateway Overview

Trading Times

This information is subject to change. For up-to-date information on the hours of operations and trading sessions, please visit <http://www.nyse.com>.

Hours of Operation*

	NYSE Arca Options	NYSE American Options
Opening Auction	9:30am ET	9:30am ET
Session 1, Opening Session	Not Available	Not available
Market Order Auction	Not available	Not available
Session 2, Core Session	9:30am – 4:00pm ET	9:30am – 4:00pm ET
Session 3, Late Session	Not available	Not available

* all times listed are Eastern Standard Time (EST)

For NYSE Arca and NYSE American Options, order acceptance begins at 5:30 AM.

Trading Session IDs

An order's participation in the various auctions and trading sessions is defined in the Trading Session ID and Time In Force fields. Orders can participate in multiple sessions offered for that type of financial instrument. See the [Hours of Operation*](#) table for more information.

- Session 2 (Trading Session ID = "2") option orders participate in:
 - Opening Auction
 - Session 2 (Core Session)
 - Expire based on their TimeInForce field. Day option orders expire at 4:00pm

This field is left justified and null padded. So an option order that can only participate in the core session would have "2\0\0" as its Trading Session ID.

Common Identifiers

Company Group ID

The company Group ID is assigned by NYSE Arca and identifies the market maker or brokerage firm that sends an order. It is used to identify the customer on Exchange exchanges and must be supplied on all orders. NYSE Arca will reject orders with no Company Group ID or with an invalid ID.

Option Symbology

For option orders, the NYSE UGW Binary Gateway uses Explicit Symbology (Consolidated Underlying Symbols) to identify the series for an option order:

Table 1 Fields to Identify a Series

Field	Description	Explicit
Series Symbol	Explicit = 1-6 character explicit symbol for option issue.	✓
Expiration Date	The year, month and day the series expires	✓
Put or Call	Whether the series is for a put or call	✓
Strike Price	The strike price for the series.	✓

For example, a Microsoft series for October 2012 27.50 Calls would be represented as:

- Explicit = MSFT 20121021 27.50 C (Symbol Consolidated)

Order Management

Automatic Order Cancellation on Disconnect

The NYSE UGW Binary Gateway client session can be set to automatically cancel all live or pending orders whenever a firm disconnects, with exclusions noted below. This is dependent upon the client setting the proper value to enable or disable Cancel On Disconnect on the session(s) in their Logon Message (See Logon Message).

Options – excluded from cancellation are the following:

- GTC orders
- GTX orders
- AON orders

When you logon to your NYSE UGW Binary Gateway session you will need to include the Cancel On Disconnect field in the logon message. If you do not want your live orders canceled upon disconnect, send “0” in this field. If you do want your live orders canceled upon disconnect, send “1” in this field.

For Options connections, cancel on disconnect service is mandatory, and customers will be automatically subscribed as new dedicated options connections are established.

Please note that this feature does not guarantee that all outstanding orders will be successfully canceled. Trades may happen near the disconnection time and will not be reported until the firm reconnects. Cancel requests may also fail due to a software or hardware problem, leaving an order live and subject to execution.

Automatic order cancellation is intended to help firms in emergency situations. Firms must not rely upon this feature as a normal business practice or to prevent liability of execution, nor is it a substitute for contacting the applicable trade desks to verify that all orders are indeed canceled and that the firm has received all trades.

Bulk Cancel by TPID

If you want to bulk cancel your orders across an entire ATPID/OTPID (Options Trade Permit ID) without disconnecting your UGW Binary Gateway session(s), you may use this type of bulk cancel message. The bulk cancel by TPID message is **MsgType = F with Bulk Cancel Flag set to 2 and the Account Field set with the ATPID or OTPID.**

Options – excluded from cancellation are the following:

- GTC orders
- GTX orders
- AON orders

When the Exchange receives a bulk cancel by TPID request, it will not send an acknowledgment for the request. Instead, it will begin cancelling orders and sending back to the customer Order Killed messages for each of the orders that are canceled across all the sessions that trade under the GroupID/TPID subject to cancellation.

In the event that orders subject to cancellation have been routed to other exchange destinations, a cancel pending acknowledgment for each of the routed orders will be sent to the gateway session from which the order originated. It may take longer to receive the out messages from the away destinations.

All Bulk Cancel Messages use Order Cancel (F.1)

	<u>Bulk Cancel Option</u>	<u>Platform</u>	<u>Fields</u>
1	Cancel all orders on a session	NYSE Arca Options NYSE American Options	BulkCancel = 1, OrderID = null, Symbol = null and OrigClOrdID = null
2	Bulk Cancel by TPID	NYSE Arca Options NYSE American Options	Bulk Cancel = 2, OrderID = null, Symbol = null, OrigClOrdID = null, and Account = ATPID or OTPID

NYSE Arca/American Options Self Trade Prevention Information

Self Trade Prevention (STP) is available for Market Maker Quotes and Single Leg orders entered with a capacity of Market Maker on NYSE Arca and NYSE American Options. A quote/order that would execute at a price level locking a contra-side quote/order entered with the same OTPID/ATPID (or MMID linked to the same OTPID/ATPID) will be cancelled with reason text “Self Trade Prevention”.

Available STP Types consist of Cancel Old, Cancel New, and Cancel Both, and are applied to quotes and orders as follows:

- **Market Maker Quotes** – the Exchange defaults all Market Maker Quotes with STP Type Cancel Old. To change the default STP Type configuration per Underlying Symbol for a given MMID, the Self Trade Prevention Request may be used. Once accepted, the requested STP Type will be applied to all quotes

entered for that symbol by that MMID, on a go-forward basis. STP configurations are persisted overnight.

- **Market Maker Orders** – Self Trade Prevention is available for Single Leg orders entered using the NYSE UGW Binary Gateway or CGW FIX Gateway, with a capacity of Market Maker (CustomerOrFirm = 3). STP Type is specified on an order-by-order basis using the field/tag NoSelfTrade (in FIX, tag 7928). To opt out of STP, the firm should null pad the field (Binary) or omit the tag from the order (FIX).

The Exchange defaults PNP orders only with STP Type Cancel Old. To change the STP Type, the firm should send the order with the desired value in the field/tag NoSelfTrade (in FIX, tag 7928). An option to opt-out of STP is not available for PNP orders.

STP Type cannot be changed on a Cancel/Replace Request. The new order inherits the STP Type of the order it is replacing.

Below are the instances where Self Trade Prevention for Options will not apply:

- Self Trade Prevention will not apply if a CMTA is defined in the ClearingFirm Field on either the old or the new order.
- Self Trade Prevention will not apply for any cross orders or Complex orders
- Self Trade Prevention will not apply to Auction Trading

Display Price Update Acknowledgement (Optional) - for Re-Pricing PNP & Re-Pricing ALO Orders

The Re-pricing PNP order (NYSE Arca & American Options) and Re-Pricing ALO order (NYSE Arca Options) may be sent with an optional instruction to receive unsolicited Display Price Update Acks:

ExtendedPNP = A - Repricing PNP or ALO with Display Price Update Acks

If on arrival, such order is assigned a display price different from its limit price, the Exchange will send a Display Price Update Ack to the session that entered the order each time the display price of the resting order is updated.

Display Price Update Acks are only available for sessions configured to use the Execution Report Verbose (Variant 2) message. The Ack is sent with a custom ExecType value, and will indicate the updated display price and display quantity:

- Message Type = 2 -Variant 2
- Execution Type = U - Unsolicited
- Price - updated display price
- Leaves - updated display quantity
- Text - Display Price Updated

Once a firm subscribes to use the Execution Report Verbose (Variant 2) message format and begins sending re-pricing orders on a given session, the subscription should not be changed intraday to other message variants to avoid conflicts with retransmission of the verbose format. If an intraday change must be made, the firm should login with Last Received sequence number of -1 to bypass any message retransmission.

Give-Up Functionality

Firms can perform give-ups on single sided or crossing orders by contacting Client Relationship Services to set up a list of sub-account look ups and authorize the give-ups. Once set up, the firms can submit the sub-account in the ClearingAccount field on order messages and the exchange will use the sub-account along with the UGW session details to look up and perform the give-up.

- Orders entered with an invalid sub-account in the ClearingAccount field will be rejected.
- Crossing orders (CUBE, QCC) support separate give-ups on each side of a cross by specifying different sub-accounts on either side of the Order Cross message.
- Give-Up functionality is available for both single leg and complex orders.

Local and Away Market Maker Identification (NYSE Arca & NYSE American Options)

NOTE: This is for OPTIONS Market Makers ONLY

If a Market Maker is entering orders with the CustomerOrFirm field set to 3 (Market Maker) they must identify themselves as an “away” market maker on one of the other options exchanges or a “local” market maker on the Options platform. The New Order Single message contains a field called LocalOrAway. Market Makers must send a 1 if they are a “local” Options market maker or a 2 if they are an “away” market maker.

In addition to identifying the type of market maker that is entering an order, a market maker must populate the SenderSubID field with a valid Market Maker ID. This ID will be an Options MMID for Options market makers or an “away” Market Maker ID for firms that make their markets on other exchanges.

* Please see the SenderSubID and LocalOrAway fields in the New Order Single tables for more detail.

Binary Prices

Prices are represented as whole integers in binary.

Strike prices for options are fixed at 4 decimal places. All other prices may have more or fewer decimal places.

The decimal position can be determined by using the Price Scale code in the message. To determine the decimal price, divide the whole integer price by the value that the price scale code represents.

- **Example 1:** Whole integer price is 1350 and the price scale code is 2. To determine the decimal price, divide 1350 by 100 (10^2 or 10^2). The result is a decimal price of 13.50.
- **Example 2:** Whole integer price is 135 and the price scale code is 1. To determine the decimal price, divide 135 by 10 (10^1 or 10^1). The result is a decimal price of 13.5 (same as 13.50).
- **Example 3:** Whole integer price is 25 and the price scale code is 0. The price scale code is 0 so no division is necessary. The result is a price of 25 (same 25.00).

The Price Scale field is a single character.

Price Scale Codes

Price Scale Code	Denominator Value	Denominator Value (factor of 10)
------------------	-------------------	----------------------------------

"0"	N/A	N/A
"1"	10	10 ¹ (10 ¹)
"2"	100	10 ² (10 ²)
"3"	1,000	10 ³ (10 ³)
"4"	10,000	10 ⁴ (10 ⁴)
"5"	100,000	10 ⁵ (10 ⁵) (Equity V1 Fill and V1 Bust/Correct)

Note: Price Scale Code of "0" indicates that the whole integer price in the price field is the actual price and no conversion or division is necessary.

Message Formatting

The message tables provided later in the document indicate when a particular field is needed (✓). When a field is not needed, that field should be set to null (or zeroes in binary). Note that all message fields must be provided in the exact position indicated even if not used (then null filled to binary zeroes if unused). All of the messages are of a fixed size with positional fields at a preset location.

Message Type Summary

Message Type		Instrument O= Options	Direction	Function	Description
Type Code	Variant		C = Client X = Exchange		*(Grayed/Italic messages are currently not available)
A	1	O	C X	Logon	C - Initial Logon to server for order entry. X – Login Response (Accept)
A	2	O	C X	Logon	C - Initial Logon to server for order entry. X – Login Response (Accept)
L	1	O	X	Logon Reject	If Logon is rejected for some reason.
1	1	O	C X	Test Message	Test and heartbeat.
0	1	O	C X	Heartbeat Message	Test and heartbeat.
B	1	O	C	Order Cross (Single)	Options Order Cross Single
B	2	O	C	Complex Cross Order (leg definition)	Options Order Cross Complex (leg definition)
B	3	O	C	Complex Cross Order (using complex symbol)	Options Order Cross Complex (complex symbol)
C	1	O	X	Bust/Correct	Trade Bust or Trade Correction

Message Type		Instrument O= Options	Direction	Function	Description
D	2	O	C	New Order	Equivalent to V3 API.
D	3	O	C	Verbose New Order	Equivalent to V3 Verbose API.
D	4	O	C	New Order (Complex)	Options Complex Orders with Legs
D	5	O	C	Complex Order using complex symbol	Options Complex Orders with Legs
E	1	O	X	Cancel/Replace Ack	Order has pending replacement
F	1	O	C	Order Cancel	Options Cancel
F	2	O	C	Order Cancel (Complex)	Complex Options Cancel
G	1	O	C	Order Cancel/Replace	Options Cancel/Replace
G	2	O	C	Order Cancel/Replace (Verbose Format)	Options Cancel/Replace Verbose
G	3	O	C	Cancel/Replace Order	Fast Cancel/Replace Options
G	5	O	C	Complex order Cancel/Replace (with leg definition)	Cancel/Replace Complex (leg definition)
G	6	O	C	Complex order Cancel/Replace using complex symbol	Cancel/Replace Complex (Complex symbol)
G	7	O	C	Complex order Fast Cancel/Replace using complex symbol	Fast Cancel/Replace Complex
J	1	O	C	Allocation	Allocation Message
P	1	O	X	Allocation Ack	Allocation Acknowledgement Message
R	1	O	C	New Complex Symbol Request	New Complex Symbol Request
R	1	O	X	New Complex Symbol Ack	New Complex Symbol Ack

Message Type		Instrument O= Options	Direction	Function	Description
A	1	O	X	Order Ack	Order has been booked
2	1	O	X	Order Filled	Order has filled – small message
2	2	O	X	Order Filled	Order has filled - verbose format
2	3	O	X	Order Filled	Order has filled – verbose format (Complex Order)
2	4	O	X	Order Filled	Order has filled – verbose format (Complex Cross Order)
4	1	O	X	Order Killed	Order killed
5	1	O	X	Order Replaced	Order has been replaced successfully
6	1	O	X	Order Cancel Request Ack	Order has pending cancellation
8	1	O	X	Order Rejected Message	Order or Cxl or Cxl/Replace has been rejected due to incorrect or unaccepted value or invalid order type

3 Session Management

Overview

Clients initiate a TCP/IP session to the Gateway. Session logon is always initiated by the client connection. Application messages may be exchanged between the client and server after logon is successful. A client has five seconds after they connect to send a logon request or the server drops the connection.

Messages have a defined number of fixed-length fields, containing both binary and ASCII data. All binary data is sent in network Endian format (Big Endian). All ASCII data is left justified and null padded. Each message contains a message termination field that must contain an ASCII Line Feed character '\n'

During periods of inactivity, the server and/or client use the Test Request and Heartbeat messages to ensure the connection is up and functioning properly. The client must be able to respond to Test Request messages from the server by sending a Heartbeat message.

Disconnects

TCP/IP connections can experience disconnections for many reasons. To ensure that no order flow messages are lost when disconnections occur, each order message has a sequence number. Clients assign sequence numbers to the messages they send the server and the server tracks these numbers. Similarly, the server assigns its own sequence numbers to the order responses that it sends to the client.

When clients log on after a disconnection, information in the Logon message allows the client and server to exchange the sequence number of the last message that they processed from the other party. Each side can then start sending the next message that has not been processed by the other side.

Clients can also choose to have the NYSE UGW Binary Gateway cancel all resting orders when a disconnection happens.

Session Throttle

This type of order gateway has a throttle limit of 1000 total inbound messages read per second for each configured client order session. The Enforced Message Rate Limitation is to ensure a session provides more predictable performance, while also preventing it from affecting the performance of other sessions on the same gateway.

Processing:

After the 1000th message is received within a rolling 1 second, any subsequent message is buffered until that second is completed. The application then sequentially processes queued messages, carrying over to further seconds every additional 1000 messages in the buffer. In this manner; if 5001 messages are sent to the port in under a second, the last one will not be processed by the gateway until the 5th second.

Outbound message rate from the gateway is not inhibited.

Recommendation:

It is recommended that firms monitor their exchange-bound message rate for a session, and adjust their order flow to utilize other sessions if this limit is frequently approached.

Logon Message Variants (and Logon Accepted)

Clients use the Logon message to establish a connection, identify the symbol protocol they will use for the client session and identify the last response message they have processed. The server may accept or reject the client logon. If logon is successful, the NYSE UGW Binary Gateway sends a Logon message back to the client indicating the last request message the server has processed.

The Last Sequence Number field is used to recover order messages when disconnections happen. For the initial connection, clients should set the Last Sequence Number field to zero. The Logon response from the server will also show zero for the initial connection.

If an inadvertent disconnect happens, clients should use the Last Sequence Number field to indicate the last order response message received from the server. The server will begin sending order responses from the next sequence number.

Similarly, the server sends back the sequence number for last client order request that the server processed in the Logon response message. Clients should use this to determine if order messages have been dropped and should be sent again.

Clients should not skip sequence numbers. A client can however pass '-1' as the Last Sequence Number to notify the server not to validate the next sequence number. The server will accept the next sequence from the client and then send what it thinks is the next outbound sequence.

Logon Message – Variant 1

Logon Message	Length	Type	Options	Notes and Values	
Message Type	1	Alpha Numeric	✓	'A'	
Variant	1	Binary	✓	Value = 1	
Length	2	Binary	✓	Binary length of the message	
SeqNum	4	Binary			
Last Sequence Number	4	Binary	✓	Last sequence number processed.	
				Values	Meaning
				0	Replay every message previously sent by the Exchange.
				-1	Do not replay any message but continue from the last known transmitted sequence plus one.
				N > 0	User specifies the last Sequence you successfully processed. The server will rewind to this number plus one and retransmit from that point up to the current sequence number.
UserName	5	Alpha Numeric	✓	Gateway Login ID	
Symbology	1	Binary	✓	Method used to identify an option series.	
				Values	Meaning
				2	OCC/OSI Explicit Symbology
				Values 2 and 3 are both be considered OSI Explicit and strict validation no longer applies.	
Message Version Profile	28	BytePair	✓	Provides the desired message versioning profile to use during the session. These consist of an array of up to 9 BytePairs. The first byte of the pair indicates the message type and the second byte is the message version desired. Entries with a null message type or version are ignored.	
Cancel On Disconnect	1	Binary	✓	0 = Do Not Cancel On Disconnect (Cancel on Disconnect will not be activated for the session) 1 = Enable Cancel on Disconnect (Cancel On Disconnect will be activated for the session)	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”	
Total	48				

Message Version Profile

The system provides the following “default” profile if the user fails to supply one with the Logon message. Use the first two columns as the data to send, but modify as desired. For example send the following byte stream on the Message Version Profile field: ‘L’,1,’a’,1,’4’,1,’E’,1,’5’,1,’8’,1,’6’,1,’C’,1,’2’,1.

MsgType (ASCII)	MsgVersion (Binary)	Description
‘L’	1	Logon Ack
‘a’	1	New Order Ack
‘4’	1	Order Killed Notification
‘E’	1	Cancel/Replace Ack
‘5’	1	Order Replaced Ack
‘8’	1	Order Reject Ack
‘6’	1	Cancel Order Ack
‘C’	1	Bust/Correct Ack
‘2’	1	Order Fill defaults to regular Order Fill message (Variant 1)

Any profile supplied by the user will override the default profile. If the user fails to supply a particular message type then the corresponding “default” profile will apply for that message.

Self Trade Prevention Note (Order Killed (4) Variant 2: When you log in with Variant 1 of the Order Killed Message in your message profile or choose the default profile, you need to expect to receive both Variants 1 and 2 of the Order Killed messages if you intend to use Self Trade prevention.

Logon Message – Variant 2

Logon Request Variant 2 uses bit map as an indexing technique to indicate which data elements in the session profile are present. The presence of a data element is indicated by a 1 in the assigned position; a zero (0) indicates the absence of a data element. Each session profile element excluding the delimiter is assigned to a specific bit. The bit array can consists up to 32 bits although current implementation only uses from bit 1 to 3, future enhancements may use any of the unused bits. Using this technique allows GCCG to add new configurable profile features without new API changes. Bits that are not set will use the system default values and all unused bits must be set to 0.

Logon Message	Length	Type	Options	Notes and Values	
Message Type	1	Alpha Numeric	✓	'A'	
Variant	1	Binary	✓	Value = 2	
Length	2	Binary	✓	Binary length of the message	
SeqNum	4	Binary			
Last Sequence Number	4	Binary	✓	Last sequence number processed.	
				Values	Meaning
				0	Replay every message previously sent by the exchange.
				-1	Do not replay any message but continue from the last known transmitted sequence plus one.
				N > 0	User specifies the last Sequence you successfully processed. The server will rewind to this number plus one and retransmit from that point up to the current sequence number.
Session Profile Bit Map	4	Binary	✓	32 Bit Map representation of Session Profile. Each bit denotes the presence or absence of the data element in the session profile string.	
UserName	5	Alpha Numeric	✓	Gateway Login ID	
Session Profile String	Variable	Alpha Numeric	✓	The list of data elements that are set. <u>Must</u> be in the order session profile bit map	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”	
Total	22 + Session Profile Length				

Session Profile Bit Map

Bit #	Description	Type	Default
1	Message Version	Constant	Verbose format
2	CancelOnDisconnect	Constant	0 = Do Not Cancel On Disconnect (Cancel on Disconnect will not be activated for the session)
3	ExtendedExecInst	Constant	No default
4	ProactivelyLocked	Optional	No default
5-32	Unused (0)		

Type

- Constant – bitmap is always enabled regardless what the customer sends in their logon request
- Optional – bitmap is enabled only if the customer set the attribute in their logon request.

Session Profile String

Bit	Logon Message	Length	Type	Options	Notes and Values
1	Message Version Profile	28	BytePair	✓	Provides the desired message versioning profile to use during the session. These consist of an array of up to 9 BytePairs. The first byte of the pair indicates the message type and the second byte is the message version desired. Entries with a null message type or version are ignored.
2	Cancel On Disconnect	1	Binary	✓	0 = Do Not Cancel On Disconnect (Cancel on Disconnect will not be activated for the session) 1 = Enable Cancel on Disconnect (Cancel On Disconnect will be activated for the session)
3	Default Extended ExecInst	1	Alpha Numeric		Null = No Default Instruction
4	Default Proactive If Locked	1	Alpha Numeric		Null/"0" = No Default Instruction – Not proactive if locked, and cancel if priced through LULD "Y" = Proactive if Locked/Non-display remove liquidity (MPL orders), and Cancel if priced through LULD "1" = Re-price if priced through LULD "2" = Proactive if Locked/Non-display remove liquidity (MPL orders), and Re-price if priced through LULD

Example 1

Logon request with Enabled bit 1 (Message Version Profile) and bit 3 (Extended Execution Instruction (Add Liquidity Only)) and Disabled bit 2 (Cancel On Disconnect), Disabled bit 4 (Proactive if Locked)

32 Bitmap Representation – 1010 0000 0000 0000 (binary value = 5)

A2 Fixed Data Length	Message Version Profile	Cancel On Disconnect	Default Extended Execution Instruction	Default Proactive If Locked
22	28	0	1	0

Total message length = 51

Example 2

Logon request with enabled bit 1, bit2 and bit 3.

32 Bit Map Representation – 1110 0000 0000 0000 (binary value = 7)

A2 Fixed Data Length	Message Version Profile	Cancel On Disconnect	Default Extended Execution Instruction	Default Proactive If Locked
22	28	1	1	0

Total message length = 52

Example 3

Logon request with disabled bit 1, bit2 and bit 3.

32 Bitmap Representation – 0000 0000 0000 0000 (binary value = 0)

A2 Fixed Data Length	Message Version Profile	Cancel On Disconnect	Default Extended Execution Instruction	Default Proactive If Locked
22	28	0	0	0

Total message length = 22

Logon Accepted Message

The NYSE UGW Binary Gateway sends a Logon Accept message back to the client with the same structure as described for the Logon Message. Note that the returned Message Version Profile will indicate the actual profile that has been established for that session.

Logon Reject Message

The NYSE UGW Binary Gateway sends a Logon Reject message only when logon validation fails and then closes the connection. If logon was successful, the gateway sends a Logon message back to the client. There are times when the client may not receive a response.

The Client Logon Status field indicates the reason for the rejection.

Logon Reject Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'L'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
SeqNum	4	Binary		Should be ignored
Last Sequence Number Received	4	Binary	✓	The last sequence number from a client message that was received and processed.
Last Sequence Number Sent	4	Binary	✓	The sequence number for the last message sent to the client.
Reject Type	2	Binary	✓	The rejection code (see reject section later in this document).
Text	40	Alpha	✓	The rejection reason description.
Filler	1		✓	Null Pad
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	60			

Test Request Message

The Test Request message is sent by either side of the connection to request the other side to respond with a Heartbeat message, when that side does not receive a message during periods of inactivity. If the other side does not respond to a Test Request message, the application should assume an abnormal situation and terminate the TCP/IP connection.

The server will send a Test Request message only during periods of inactivity after the first heartbeat period (60 seconds). At a minimum, the client must respond to this message with a Heartbeat message. The server will disconnect the client following a subsequent period with no activity.

Test Request Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha/Numeric	✓	'1'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence	4	Binary	✓	Ignore (future use)
Filler	3			Ignore
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	12			

Heartbeat Message

The Heartbeat message is used to respond to Test Request messages. It lets the other side know the connection is still good during periods of inactivity. The default server heartbeat interval is 60 seconds. However, a client may request a higher or lower heartbeat interval to be set on a given session if desired. Please contact the Trade Desk to request this change on your sessions.

At a minimum a client must be able to receive Test Request messages and respond with Heartbeat messages. During periods of activity the server will not send Test Request or Heartbeat messages and there is no need for the client to send them.

Heartbeat Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha/Numeric	✓	'0'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence	4	Binary	✓	Ignore (future use)
Filler	3			Ignore
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"

Total	12			
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4 Application Messages

This section describes the Application Messages for this interface. Binary data is in Network Endian format (Big Endian). All Filler and Padding fields contain null characters. Non-binary fields should be left justified and null padded.

D = New Order Message (Variant 2)

New Order Message D.2	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'D'
Variant	1	Binary	✓	2 – Indicates this type of message
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
Link ID	4	Binary	✓	Client order link ID
OrderQty	4	Binary	✓	The number of contracts for this order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
Price	4	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Put or Call	1	Binary	✓	The option class: 0 = Put 1 = Call
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. '0' = No corporate changes

New Order Message D.2	Length	Type	Options	Notes and Values
				'1' = Created for a corporate action
Open or Close	1	Alpha	✓	Open or Close the position. "O" = Open "C" = Close
ExDestination*	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
Symbol	8	Alpha	✓	The Explicit Options symbol the client has chosen to use. This field is set to the Series Symbol in Explicit naming.
Strike Date	8	Alpha	✓	The option expiration date in YYYYMMDD format.
Company GroupID	5	Alpha Numeric	✓	The company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
DeliverTo ComplD	5	Alpha Numeric		The ID of the market maker to route a Directed order to. <i>Null Pad this field out if the order is not participating in the Directed Order Processes.</i>
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. <u>Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.</u>
Execution Instructions	1	Alpha Numeric	✓	Additional information on how to handle the order. See the <i>Order Types</i> sections of this document for more detail.
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Order Type	1	Alpha Numeric	✓	"1" = Market "2" = Limit
Time In Force **Note: IOC is not a valid TIF on Reserve orders	1	Alpha Numeric	✓	"0" = Day order "1" = GTC (Good Till Cancel) "2" = Opening auction only "3" = IOC (not valid on Market Orders) "4" = FOK (not valid on Market Orders) "5" = Good Till Crossing (GTX)

New Order Message D.2	Length	Type	Options	Notes and Values
				Note: Timed Orders are not currently available.
Rule80A	1	Alpha Numeric		Not applicable for Options - null pad this field.
Customer Or Firm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer
Trading Session ID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. "2" = 9:30am - 4:00am ET (Options)
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ',' (comma), ';' (semicolon), ' ' (pipe), '@' (at symbol) and ' ' (double quotation mark)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Clearing Account	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
LocalOrAway	1	Binary	✓	1 = Local Options MM 2 = Away MM for another options exchange. 3 = Adds Customer Sub-Account Suffix (For use by "away" market makers only)
ISO	1	Alpha	✓	'Y' = ISO Sweep 'N' = No ISO flag Additional parameters are used to specify the variation of the ISO Order. See Section 5. *On Options, TimeInForce=3 and ExecInst = f along with ISO = Y defines an ISO IOC Order

New Order Message D.2	Length	Type	Options	Notes and Values
ExtendedExec Inst	1	Alpha Numeric	✓	0x00 NULL not set 'A' Add Liquidity Only (ALO) 'W' Expose Order Info Only (BOLD) 'X' Expose Order Info and Capacity Only (BOLD) 'Y' Expose Order Info and Participant ID Only (BOLD) 'Z' Expose Order Info, Capacity, and Participant ID (BOLD)
Extended PNP	1	Alpha	✓	0x00 NULL not set 'B' Extended PNP Blind 'L' PNP Light Only 'S' Re-pricing PNP or Re-pricing ALO - without display price update Acks 'A' Repricing PNP or Re-pricing ALO - WITH display price update Acks
NoSelfTrade	1	Alpha	✓	0x00 NULL not set Options values: 'N' Cancel New 'O' Cancel Old 'C' Cancel Both
Proactivelocked	1	Alpha/Numeric		"0" = Default, no proactive if locked flag "Y" = Proactive if Locked/Non-display remove liquidity (MPL orders) "1" = Re-price if priced through LULD "2" = Proactive if Locked/Non-display remove liquidity (MPL orders), and re-price if priced through LULD
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	104			

D = New Order Verbose Format Message (Variant 3)

New Order Message D.3 [verbose]	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'D'
Variant	1	Binary	✓	3 – Use to indicate this type of message
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
PCS Link ID	4	Binary		No Longer Used. Filler
Order Quantity	4	Binary	✓	The number of contracts for this order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
MinQty	4	Binary		> = 100 (Cannot be mixed lot or odd lot amount)
Max Floor	4	Binary	✓	> = 100 (Cannot be mixed lot or odd lot amount) **Note: PNP Blind ALO orders may not be entered as Reserve
Display Range	4	Binary		0 – 999,999 (Null pad field if not used)
DiscretionOffset	4	Binary		Price Fixed at Price Scale 2 -9999.99 – 9999.99
Peg Difference	4	Binary		Price Fixed at Price Scale 2 -9999.99 – 9999.99
StopPx	4	Binary	✓	Price Field fixed at Price Scale of 2 .01 to 99,999
Price	4	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination*	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.

New Order Message D.3 [verbose]	Length	Type	Options	Notes and Values
				*This field requires the proper value. If the value is not populated correctly or null padded out, your order will reject.
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
Put Call	1	Binary	✓	The option class: 0 = Put 1 = Call
LocalOrAway	1	Binary	✓	1 = Local OptionsMM 2 = Away MM for another options exchange. 3= Adds Customer Sub-Account Suffix (For use by “away” market makers only)
Price Scale	1	Alpha Numeric	✓	“0” through “4”
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. ‘0’ = No corporate changes ‘1’ = Created for a corporate action
Open Close	1	Alpha Numeric	✓	“O” = Open “C” = Close
Symbol	8	Alpha	✓	In options orders this field is set to the Series Symbol in either OCC or Explicit naming.
Strike Date	8	Alpha	✓	The option expiration date in YYYYMMDD format.
CompanyGroupID	5	Alpha Numeric	✓	The company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
DeliverToCompID	5	Alpha Numeric		The ID of the market maker to route a Directed order to. <i>Null Pad this field out if the order is not participating in the Directed Order Processes.</i>
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.

New Order Message D.3 [verbose]	Length	Type	Options	Notes and Values
Execution Instructions	1	Alpha Numeric	✓	Additional information on how to handle the order. See the <i>Order Types sections</i> of this document for more detail.
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Order Type	1	Alpha Numeric	✓	"1" = Market "2" = Limit "3" = Stop
Time In Force **Note: IOC is not a valid TIF on Reserve orders	1	Alpha Numeric	✓	"0" = Day order "1" = GTC (Good Till Cancel) "2" = Opening auction only "3" = IOC (not valid on Market Orders) "4" = FOK (not valid on Market Orders) "5" = Good Till Crossing (GTX) Note: Timed Orders are not currently available.
Rule80A	1	Alpha Numeric		Not applicable for Options - null pad this field.
Customer Or Firm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer
TradingSessionID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. "2" = 9:30am-4:00pm ET
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ' ' (comma), ';' (semicolon), ' ' (pipe), '@' (at symbol) and ' ' (double quotation mark)
Optional Data	16	Alpha	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ' ' (comma), ';' (semicolon), ' ' (pipe), '@' (at symbol) and ' ' (double quotation mark)

New Order Message D.3 [verbose]	Length	Type	Options	Notes and Values
Clearing Firm	5	Alpha Numeric	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Clearing Account	5	Alpha Numeric	✓	The clearing give-up subaccount may be specified here. (Optional Field)
Expire Time Flag	1	Alpha	✓	"D" – Date,
ExpireTime	4	Alpha Numeric		"MMDD" or "HHMM" If HHMM (Local Eastern Time applies, 24 Hour Clock) Ex. 1900 (7:00pm ET)
Effective Time	4	Alpha Numeric		No Longer Used. Filler
DiscretionInst	1	Alpha Numeric		"\0" = Not Used "0" = DiscretionInst is set
Proactive Discretion Indicator	1	Alpha Numeric		"\0" = Not Used "1" = Discretion Order
ProactivelyLocked	1	Alpha Numeric		"\0" = Default, no proactive if locked flag "Y" = Proactive if Locked/Non-display remove liquidity (MPL orders) "1" = Re-price if priced through LULD "2" = Proactive if Locked/Non-display remove liquidity (MPL orders), and re-price if priced through LULD
ExecBroker	5	Alpha		Set to "POO" on Primary Open Order
ISO	1	Alpha	✓	'Y' = ISO Sweep 'N' = No ISO flag Additional parameters are used to specify the variation of the ISO Order. See Section 5. *On Options, TimeInForce=3 and ExecInst=f along with ISO = Y defines an ISO IOC Order
Symbol Type	1	Alpha Numeric		Null Pad this field out. Reserved for future use.

New Order Message D.3 [verbose]	Length	Type	Options	Notes and Values
ExtendedExecInst	1	Alpha numeric	✓	0x00 NULL not set 'A' Add Liquidity Only (ALO) 'W' Expose Order Info Only (BOLD) 'X' Expose Order Info and Capacity Only (BOLD) 'Y' Expose Order Info and Participant ID Only (BOLD) 'Z' Expose Order Info, Capacity, and Participant ID (BOLD)
Extended PNP	1	Alpha		0x00 NULL not set 'B' Extended PNP Blind 'L' PNP Light Only 'S' Re-pricing PNP or Re-pricing ALO - without Display Price Update Acks 'A' Repricing PNP or Re-pricing ALO - WITH Display Price Update Acks
NoSelfTrade	1	Alpha		0x00 NULL not set Options values: 'N' Cancel New 'O' Cancel Old 'C' Cancel Both
Filler	3	Alpha Numeric		
Message Terminator	1	Alpha		ASCII new line character: "\n"
Total	164			

D = New Complex Order Message - Options (Variant 4)

New Order Message D.4 [Complex]	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'D'
Variant	1	Binary	✓	Value = 4
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number

New Order Message D.4 [Complex]	Length	Type	Options	Notes and Values
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate ClOrdIDs are received, the duplicate order will be rejected.
Order Quantity	4	Binary	✓	The number of contracts for this order.
Price	8	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. *On UGW for Options, this field requires the proper value. If the value is not populated correctly or null padded out, your order will reject.
Company Group ID	5	Alpha Numeric	✓	The company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Order Type	1	Alpha Numeric	✓	"2" = Limit
Time In Force	1	Alpha Numeric	✓	"0" = Day order "1" = GTC (Good Till Cancel) "3" = IOC (not valid on Market Orders) "5" = Good Till Crossing (GTX) Note: Timed Orders are not currently available.
TradingSessionID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. "2" = 9:30am-4:00pm ET
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters

New Order Message D.4 [Complex]	Length	Type	Options	Notes and Values
				Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Clearing Account	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
Customer Or Firm	1	Alpha Numeric	✓	“0” = Customer “1” = Firm “2” = Broker “3” = MarketMaker “8” = Professional Customer
ExecInst	1	Alpha Numeric	✓	Additional information on how to handle the order. See the <i>Order Types</i> sections of this document for more detail. No ExecInst Value = (null) M = PNP Plus
ExtendedExecInst	1	Char	✓	“C” Complex Order Auction Note: Complex orders marked Complex Order Auction (‘C’) should only be submitted in trading session 2 (Core) and not during session 1 (pre-market)
Extended PNP	1	Char	✓	Not currently used.
DeliverToCompID	5	Alpha		This field is not used and should be null padded out
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.

New Order Message D.4 [Complex]	Length	Type	Options	Notes and Values
Number Of Legs	1	Binary	✓	The total number of repeating legs. (Max.number of legs = 5)

Complex Order Leg

New Complex Order Message 'D.4'	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
LegRatioQty	2	Binary	✓	The ratio of quantity for this individual leg relative to the order quantity
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
Symbol	8	Alpha	✓	The type of symbol the client has chosen to use, for option orders.
Strike Date	8	Alpha Numeric	✓	The option expiry date in YYYYMMDD format.
Security Type	8	Alpha	✓	Indicates type security. Valid security type "OPT" and "CS"
Side	1	Alpha Numeric	✓	'1' = Buy, '2' = Sell
Put Call	1	Binary	✓	0 = Put, 1 = Call
Open Close	1	Alpha Numeric	✓	"O" = Open, "C" = Close
Padding	1	Binary	✓	

Note: The Complex Order Leg is only to be used embedded inside the Complex Order Message.

New Order Message D.4 [Complex]	Length	Type	Options	Notes and Values
Local Away	1	Alpha	✓	
Filler	5	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	280			

D = New Complex Order Message (complex symbol) - Options (Variant 5)

Complex Order Message (using complex symbol) D.5 [Complex]	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘D’
Variant	1	Binary	✓	Value = 5
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate ClOrdIDs are received, the duplicate order will be rejected.
Order Quantity	4	Binary	✓	The number of contracts for this order.
Price	8	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. *On UGW for Options, this field requires the proper value. If the value is not populated correctly or null padded out, your order will reject.
Symbol	21	Alpha Numeric	✓	Complex Symbol

Complex Order Message (using complex symbol) D.5 [Complex]	Length	Type	Options	Notes and Values
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Order Type	1	Alpha Numeric	✓	"2" = Limit
Side	1	Alpha Numeric	✓	'1' = Buy, '2' = Sell
Time In Force	1	Alpha Numeric	✓	"0" = Day order "1" = GTC (Good Till Cancel) "2" = At the Opening "3" = IOC (Immediate or Cancel) "5" = Good Till Crossing (GTX)
ExecInst	1	Alpha Numeric	✓	Additional information on how to handle the order. See the <i>Order Types</i> sections of this document for more detail. No ExecInst Value = (null) M = PNP Plus
ExtendedExecInst	1	Char	✓	"C" Complex Order Auction Note: Complex orders marked Complex Order Auction ('C') should only be submitted in trading session 2 (Core) and not during session 1 (pre-market)
Customer Or Firm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = MarketMaker "8" = Professional Customer
LocalOrAway	1	Binary	✓	1 = Local Options MM 2 = Away MM for another options exchange. 3 = Adds Customer Sub-Account Suffix (For use by "away" market makers only)
Short Sell Indicator	1	Alpha Numeric	✓	"Y" = Short Sell "N" = Not a Short Sell
Company Group ID	5	Alpha Numeric	✓	The company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company

Complex Order Message (using complex symbol) D.5 [Complex]	Length	Type	Options	Notes and Values
				ID of the firm that is entering order through the service bureau.
TradingSessionID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. “2” = 9:30am-4:00pm ET
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Clearing Account	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.
StockLegGiveUp	5	Alpha	✓	
Optional Data	16	Alpha Numeric	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)

Complex Order Leg (up to 5 legs)

Complex Order Message (using complex symbol) D.5 [Complex]	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
Open Close	1	Alpha Numeric	✓	“O” = Open “C” = Close

Note: The Complex Order Leg is only to be used embedded inside the Complex Order Message.

Complex Order Message (using complex symbol) D.5 [Complex]	Length	Type	Options	Notes and Values
Filler	7	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	144			

F = Order Cancel Message (Variant 1)

This message requests that an order booked at the Exchange be canceled. There are several possible responses: Cancel Ack, Reject or Order Killed.

Order Cancel Message F.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'F'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned OrderID.
OriginalCLOrdID	4	Binary	✓	Client order ID of the order to be canceled. If the order to be canceled is an order that has been replaced, this should be the ID of the replacement order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
UnderlyingQty	2	Binary	✓	The number of shares per option contract for this series (option orders only)
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. <i>Must be the same Exchange Code from the New Order Message.</i>
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. 0 = No corporate changes 1 = Created for a corporate action
Put or Call	1	Binary	✓	The option class: 0 = Put 1 = Call
Bulk Cancel	1	Binary	✓	0 = not set 1 = Perform Bulk Cancel 2 = Bulk Cancel by ATPID/OTPID (Options)

Order Cancel Message F.1	Length	Type	Options	Notes and Values
Open or Close	1	Alpha	✓	“O” = Open “C” = Close
Symbol	8	Alpha	✓	Type of symbol the client has chosen to use, for option orders.
Strike Date	8	Alpha	✓	The option expiry date in YYYYMMDD format.
Side	1	Alpha Numeric	✓	“1” = Buy “2” = Sell
DeliverToCompID	5	Alpha	✓	Use only if Cancelling a Directed Order
Account	10	Alpha	✓	Used in Bulk Cancel by ATPID/OTPID when Bulk Cancel is enabled. Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	7	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “¥n”
Total	72			

F = Complex Cancel Request (Variant 2)

This message requests that an order booked at the Exchange be canceled. There are several possible responses: Cancel Ack, Reject or Order Killed.

Complex Cancel Message F.2	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'F'
Variant	1	Binary	✓	Value = 2
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned OrderID.
OriginalClOrdID	4	Binary	✓	Client order ID of the complex order to be canceled. If the order to be canceled is an order that has been replaced, this should be the ID of the replacement order.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. <i>Must be the same Exchange Code from the D.5 Complex Order Message.</i>
Symbol	21	Alpha	✓	Complex Symbol
Filler	12	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: "¥n"
Total	56			

G = Order Cancel/Replace (Variant 1)

This message requests that an order booked at the Exchange be modified. Clients can change the quantity, price, or type of order.

Order Cancel/Replace Message G.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'G'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned OrderID.
ClOrdID	4	Binary	✓	Client Order ID for the new order that is replacing an existing order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate ClOrdIDs are received, the duplicate order will be rejected.
OriginalClOrdID	4	Binary	✓	Client Order ID of the order being replaced
Order Quantity	4	Binary	✓	Shares or contracts for this order.
Strike Price	4	Binary		The strike price for an option, as a long value with a fixed scale of 4.
Price	4	Binary	✓	Price for the order, as a long value. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. <i>Must be the same Exchange Code from the New Order Message.</i>
Under Qty	2	Binary	✓	The number of shares per option contract for this series.
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Put or Call	1	Binary	✓	The option class: 0 = Put

Order Cancel/Replace Message G.1	Length	Type	Options	Notes and Values
				1 = Call
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. 0 = No corporate changes 1 = Created for a corporate action
Open or Close	1	Alpha	✓	"O" = Open "C" = Close
Symbol	8	Alpha	✓	Options Symbol
Strike Date	8	Alpha	✓	The option expiry date in YYYYMMDD format.
Execution Instructions	1	Alpha Numeric	✓	Must be the same as the existing order
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Order Type	1	Alpha Numeric	✓	"1" = Market "2" = Limit
Time In force	1	Alpha Numeric	✓	"0" = Day order
Rule80A	1	Alpha Numeric		Not applicable for Options - null pad this field.
Trading Session ID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. "1" = 4:00am – 9:30am ET "2" = 9:30am – 4:00pm ET "3" = 4:00pm – 8:00pm ET
Deliver To Comp ID	5	Alpha	✓	Use only if Cancel/Replacing a Directed or DOP Order
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters

Order Cancel/Replace Message G.1	Length	Type	Options	Notes and Values
				Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	3	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	88			

G = Order Cancel/Replace Verbose (Variant 2)

This message requests that an order previously booked on the Exchange be modified. Clients can change the quantity, price, or type of order.

Order Cancel/Replace Message Verbose	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘G’
Variant	1	Binary	✓	Value = 2
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned OrderID
CIOrdID	4	Binary	✓	Client Order ID for the new order that is replacing an existing order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate CIOrdIDs are received, the duplicate order will be rejected.
OriginalCIOrdID	4	Binary	✓	Client Order ID of the order being replaced
Order Quantity	4	Binary	✓	Shares or contracts for this order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
MinQty	4	Binary		> = 100 (Cannot be mixed lot or odd lot amount)
Max Floor	4	Binary		> = 100 (Cannot be mixed lot or odd lot amount)

Order Cancel/Replace Message Verbose	Length	Type	Options	Notes and Values
				**Note: PNP Blind ALO orders may not be entered as Reserve
Display Range	4	Binary		0 – 999,999
DiscretionOffset	4	Binary		Price Fixed at Price Scale 2 -9999.99 – 9999.99
Peg Difference	4	Binary		Price Fixed at Price Scale 2 -9999.99 – 9999.99
StopPx	4	Binary	✓	Price Field fixed at Price Scale of 2 .01 to 99,999
Price	4	Binary	✓	Price for the order, as a long value. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. <i>Must be the same Exchange Code from the New Order Message.</i>
Put Call	1	Binary	✓	The option class: 0 = Put 1 = Call
Price Scale	1	Alpha Numeric	✓	“0” through “4”
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. 0 = No corporate changes 1 = Created for a corporate action
Open Close	1	Alpha Numeric	✓	“O” = Open “C” = Close

Order Cancel/Replace Message Verbose	Length	Type	Options	Notes and Values
Symbol	8	Alpha	✓	The type of symbol the client has chosen to use, for option orders.
Strike Date	8	Alpha	✓	The option expiry date in YYYYMMDD format.
Execution Instructions	1	Alpha Numeric	✓	Must be the same as the existing order
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell "3" = Stop
Order Type	1	Alpha Numeric	✓	"1" = Market "2" = Limit
TimeInForce	1	Alpha Numeric	✓	"0" = Day order
Rule80A	1	Alpha Numeric		Not applicable for Options - null pad this field.
CustomerOrFirm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer
TradingSessionID	4	Alpha Numeric	✓	The trading sessions the order may trade in. This field should be left justified and null padded. "2" = 9:30am – 4:00pm ET
ExpireTime Flag	1	Alpha		"D" – Date
ExpireTime	4	Alpha Numeric		"MMDD"
Effective Time	4	Alpha Numeric	✓	No longer Used. Filler
DiscretionInst	1	Alpha Numeric	✓	"\0" = Not Used "0" = DiscretionInst is set
Proactive Discretion Indicator	1	Alpha Numeric		"\0" = Not Used "1" = Discretion Order

Order Cancel/Replace Message Verbose	Length	Type	Options	Notes and Values
DeliverToCompID	5	Alpha		
Clearing Account	5	Alpha Numeric	✓	If populated, will not be processed. The original value from the original order is carried over to the replacement order.
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	2			
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	128			

G = Fast Cancel/Replace Message Options (Variant 3)

Fast cancel replace functionality is available on Option PNP orders only. One can change the volume and/or price only. All other fields will be ignored. Unlike standard cancel replace messages on our platform you will receive one execution report (MsgType=5) indicating that the order is replaced. You can suppress the pending cancel replace message (MsgType=E) with the field “Suppress Ack” set to “Y”.

Unlike traditional cancel replaces where the ClOrdID changes each time you modify an order, the fast cancel replace maintains the ClOrdID of the first order that was entered, therefore you must send the ClOrdID of the first order in the order chain in the OriginalClOrdID. The OrderID of the original order must also be included.

A reject of this message will be message type ‘8’ with the ClOrdID and OrigClOrdID Fields set the same as the client order id of the original order and the Type field set to ‘3’. On success, a Message type of “5” will be returned. A message Type “E” will be returned as an Ack of this message.

Fast Cancel/Replace Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘G’
Variant	1	Binary	✓	Value = 3
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	ArcaEx-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned order ID. This value is required and can be found returned to you on the Order Ack of the original order.
OriginalClOrderID	4	Binary	✓	ClOrdID of the first order in the order chain
Order Quantity	4	Binary	✓	The number of shares
Strike Price	4	Price	✓	The strike price for an option, as a long value with a fixed scale of 4.
Price	4	Binary	✓	The price as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.

Fast Cancel/Replace Message	Length	Type	Options	Notes and Values
				<i>Must be the same Exchange Code from the New Order Message.</i>
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
Price Scale	1	Alpha Numeric	✓	“0” through “4”
Put Call	1	Binary	✓	The option class: 0 = Put 1 = Call
Corporate Action	1	Alpha Numeric	✓	Flag indicating the series was created because of corporate changes in the underlying stock. 0 = No corporate changes 1 = Created for a corporate action
Symbol	8	Alpha	✓	The type of symbol the client has chosen to use, for option orders.
Strike Date	8	Alpha Numeric	✓	The option expiry date in YYYYMMDD format.
Suppress Ack	1	Alpha	✓	“Y” Ack will be suppressed All other values, Acks will be sent
DeliverToCompID	5	Alpha		
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	8		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	80			

G = Complex Order Cancel/Replace (Variant 5)

This message requests that an order previously booked on the Exchange be modified. Clients can change the quantity, price, or type of order.

Cancel/Replace Message G.5 [Complex]	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'G'
Variant	1	Binary	✓	Value = 5
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary		Exchange assigned order ID. This value is required and can be found returned to you on the Order Ack of the original order.
ClOrdID	4	Binary	✓	Client Order ID for the new order that is replacing an existing order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate ClOrdIDs are received, the duplicate order will be rejected
OriginalClOrdID	4	Binary		ClOrdID of the order being replaced
Order Quantity	4	Binary	✓	The number of contracts (option orders) for this order.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
Price	8	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Clearing Account	5	Alpha	✓	If populated, will not be processed. The original value from the original order is carried over to the replacement order.
DeliverToCompID	5	Alpha	✓	
Number Of Legs	1	Binary	✓	The total number of repeating legs. (Maximum number of legs = 5)

Complex Cancel/Replace Leg (Up to 5 legs)

Cancel/Replace Message Leg G.5 [Complex]	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
LegRatioQty	2	Binary	✓	The ratio of quantity for this individual leg relative to the order quantity
Underlying Quantity	2	Binary	✓	The number of shares per option contract for this series (option orders only)
Symbol	8	Alpha	✓	The type of symbol the client has chosen to use, for option orders.
Strike Date	8	Alpha Numeric	✓	The option expiry date in YYYYMMDD format.
Security Type	8	Alpha	✓	Indicates type security. Valid security type "OPT" and "CS"
Side	1	Alpha Numeric	✓	'1' = Buy '2' = Sell
Put Call	1	Binary	✓	0 = Put 1 = Call
Open Close	1	Alpha Numeric	✓	"O" = Open "C" = Close
Padding	1	Binary	✓	

Note: The Complex Order Leg is only to be used embedded inside the Complex Cancel/Relplace Message.

Cancel/Replace Message Leg G.5 [Complex]	Length	Type	Options	Notes and Values
Filler	13	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	264			

G = Complex Cancel/Replace Message (Using complex symbol) - Options (Variant 6)

Complex Cancel/Replace Message (Complex Symbol) G.6 [Complex]	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'G'
Variant	1	Binary	✓	Value = 6
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned order ID. This value is required and can be found returned to you on the Order Ack of the original order.
ClOrdID	4	Binary	✓	Client Order ID for the new order that is replacing an existing order. Valid values are 1 to 4,294,967,294 This must be unique per session per day. If duplicate ClOrdIDs are received, the duplicate order will be rejected
OriginalClOrdID	4	Binary	✓	ClOrdID of Complex Order being replaced
OrderQty	4	Binary	✓	The number of contracts for this order.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
Price	8	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
Price Scale	1	Alpha Numeric	✓	"0" through "4"
Symbol	21	Alpha Numeric	✓	Complex Symbol
Clearing Account	5	Alpha	✓	If populated, will not be processed. The original value from the original order is carried over to the replacement order.
Short Sell Indicator	1	Alpha Numeric	✓	"Y" = Short Sell "N" = Not a Short Sell

Complex Cancel/Replace Message (Complex Symbol) G.6 [Complex]	Length	Type	Options	Notes and Values
DeliverToCompID	5	Alpha	✓	

Complex Cancel/Replace Leg (Up to 5 legs)

Complex Cancel/Replace Message (Complex Symbol) G.6 [Complex]	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
OpenClose	1	Alpha Numeric	✓	“O” = Open “C” = Close

Complex Cancel/Replace Message (Complex Symbol) G.6 [Complex]	Length	Type	Options	Notes and Values
Filler	7	Alpha	✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	104			

G = Complex Fast Cancel/Replace Message (Using complex symbol) - Options (Variant 7)

One can change the volume and/or price only. All other fields will be ignored. Unlike standard cancel replace messages on our platform you will receive one execution report (MsgType=5) indicating that the order is replaced. You can suppress the pending cancel replace message (MsgType=E) with the field "Suppress Ack" set to "Y". Unlike traditional cancel replaces where the ClOrdID changes each time you modify an order, the fast cancel replace maintains the ClOrdID of the first order that was entered, therefore you must send the ClOrdID of the first order in the order chain in the OriginalClOrdID. The OrderID of the original order must also be included. A reject of this message will be message type '8' with the ClOrdID and OrigClOrdID Fields set the same as the client order id of the original order and the Type field set to '3'. On success, a Message type of "5" will be returned. A message Type "E" will be returned as an Ack of this message.

Fast Cancel/Replace Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'G'
Variant	1	Binary	✓	Value = 7
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
OrderID	8	Binary	✓	Exchange assigned order ID. This value is required and can be found returned to you on the Order Ack of the original order.
OriginalClOrdID	4	Binary	✓	ClOrdID of the first order in the order chain
OrderQty	4	Binary	✓	The number of contracts
Price	8	Binary	✓	The price as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes. <i>Must be the same Exchange Code from the New Order Message.</i>
Price Scale	1	Alpha Numeric	✓	"0" through "4"

Fast Cancel/Replace Message	Length	Type	Options	Notes and Values
Symbol	21	Alpha	✓	Complex Symbol
Suppress Ack	1	Alpha	✓	“Y” Ack will be suppressed All other values, Acks will be sent
DeliverToCompID	5	Alpha		
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	7		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	80			

6 = Cancel Request Ack Message (Variant 1)

This message informs clients when a Cancel Order message has been received but is not yet applied because the order is not available, for example if it has been routed to an away market. Once the order is available, clients may receive an Order Fill message and/or an Order Killed message.

Cancel Request Ack Message 6.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘6’
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
Sending Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight

Cancel Request Ack Message 6.1	Length	Type	Options	Notes and Values
ClOrdID	4	Binary	✓	The client order ID of the canceled order
OrderID	8	Binary	✓	Exchange assigned Order ID
Filler	3	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	40			

4 = Order Killed Message (Variant 1)

This message informs clients that an order has been canceled. It is sent in response to Order Cancel messages, cancellations at the end of sessions and administrative cancellations.

Order Killed Message	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'4'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
Sending Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client Order ID of the canceled order
Order ID	8	Binary	✓	Exchange assigned Order ID
Information Text	1	Binary	✓	Indicates whether the kill was initiated by the user or by exchange rules. “0” = user-initiated kill “1” = exchange-initiated for PNP crossed market
Filler	2	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”

Total	40			
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E = Cancel Replace Ack Message (Variant 1)

This message informs clients that a Cancel/Replace message has been received but is not yet applied because an order cannot be immediately replaced (for example, the order is linked to another exchange). See also the Replaced Message for other responses to Cancel/Replace messages.

Cancel Replace Ack Message E.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'E'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
Sending Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the cancel replace
Order ID	8	Binary	✓	Exchange assigned Order ID
Filler	3	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	40			

5 = Order Replaced Message (Variant 1)

This message indicates that an order has been successfully replaced. It is sent only when the replacement order is not immediately executable (it is booked). The Client Order ID from the new order becomes the client order ID in the replaced message.

Replaced Message 5.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'5'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
Sending Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the new order
Order ID	8	Binary	✓	Exchange assigned Order ID
Filler	3	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	40			

8 = Order Cancel/Replace Reject Message (Variant 1)

This message informs clients that an order, cancel, or cancel/replace message has been rejected. The Text field contains an explanation of the problem.

Order Cancel/Replace Reject Message 8.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'8'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
Sending Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client Order ID of the order, cancel, or cancel replace that was sent
OriginalClOrdID	4	Binary	✓	Original Client Order ID of the order, cancel, or cancel replace that was sent
Rejected Message Type	1	Numeric	✓	"1"=order reject "2"=cancel reject "3"=cancel replace reject
Text	40	Alpha	✓	Reason for the rejection
Reject Reason	1	Alpha	✓	0 = Too late to cancel '1' = See Text field for reason '3' = See Text field for reason
Filler	5	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: "¥n"
Total	80			

C = Bust/Correct Message (Variant 1)

This message is sent when an order execution has been busted or corrected. In all cases, the Trade Desk will discuss the bust or correction with the customer that entered the order prior to busting or correcting it.

Bust or Correct Message C.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'C'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Transaction Time	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client Order ID of the order that is being busted or corrected.
Execution ID	8	Binary	✓	Exchange assigned Execution ID from the order fill message (64 bit binary)
Order Quantity	4	Binary	✓	Shares or contracts executed
Price	4	Binary	✓	Corrected price in a correct message
Price Scale	1	Alpha Numeric	✓	"0" through "5"
Type	1	Alpha Numeric	✓	"1"=Bust "2"=Correct
Filler	1			
Message Terminator	1	Alpha	✓	ASCII new line character: "¥n"
Total	48			

a = Order Ack Message (Variant 1)

This message informs clients that an order has been received and booked.

Order Ack Message a.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha/ Numeric	✓	'a'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Arca-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the order
OrderID	8	Binary	✓	Exchange assigned Order ID
Price	4	Binary	✓	Price at which the order was acked
Price Scale	1	Alpha Numeric	✓	"0" through "5"
Liquidity Indicator	1	Alpha Numeric		Conditionally sent with value, otherwise null: 1 = Candidate for Liquidity Indicator "S" 2 = Blind 3 = Not Blind
Filler	5	Alpha		
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	48			

2 = Order Fill Message (Variant 1)

This message informs clients when an order has been partially or entirely filled.

Order Fill Message 2.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'2'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Arca-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the order
OrderID	8	Binary	✓	Exchange assigned Order ID
Execution ID	8	Binary	✓	Exchange assigned Execution ID. Unique per session, per day.
ArcaExID	20	Alpha Numeric	✓	Execution identifier, unique per Exchange, per day.
Last Shares or Contracts	4	Binary	✓	Number of option contracts filled
Last Price	4	Binary	✓	Price at which the shares or contracts were filled
Price Scale	1	Alpha Numeric	✓	"0" through "5"
Liquidity Indicator	1	Alpha Numeric	✓	See Appendix for Values and Definitions (Options)
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
LastMkt	2	Alpha		See Appendix for Values and Definitions (Options)
Filler	10	Alpha		

Order Fill Message 2.1	Length	Type	Options	Notes and Values
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	88			

2 = Execution Report Verbose Format (Variant 2)

This message is transmitted from the exchange to the client to notify the result of an order previously requested by the client. This message has the same function (superset) of any of the following messages types: Order Fill (z), Bust or Correct I, Order Ack(a), Cancel Ack(6), Order Killed(4), Replace Ack(E), Replace (5). Client request to be send verbose execution reports by setting a flag in the initial Logon message to the Exchange. This will supersede all messages variant defined above.

This message will also be sent unsolicited by the Exchange as a Display Price Update Ack for Re-pricing PNP and Re-pricing ALO orders sent with the optional instruction to receive such acks. See section, “Display Price Update Acknowledgement (Optional) - for Re-Pricing PNP & Re-Pricing ALO Orders.”

Execution Report Verbose Format 2.2	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘2’
Variant	1	Binary	✓	Value = 2
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange assigned sequence number
SendingTime	8	Binary	✓	UTP Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTP Time the message was sent in microseconds since Midnight
CIOrdID	4	Binary	✓	Client Order ID of the request
OrderID	8	Binary	✓	Exchange assigned Order ID
ExecID	8	Binary	✓	Exchange assigned Execution ID. Unique identifier of execution message. Unique per session, per day.
ExecRefID	8	Binary	✓	Exchange assigned Execution ID
ArcaExID	20	Alpha Numeric	✓	Execution identifier, unique per Exchange, per day.
Order Qty	4	Binary		Number of shares or contracts in the initial order
Price	4	Binary	✓	Fixed at Price Scale 4

Execution Report Verbose Format 2.2	Length	Type	Options	Notes and Values
Leaves	4	Binary	✓	Volume remaining
CumQty	4	Binary	✓	Total Volume filled
AvgPx	4	Binary	✓	Average Price – Fixed Price Scale 4
StopPrice	4	Binary	✓	Fixed at Price Scale 2
Discretion OffSet	4	Binary		Fixed at Price Scale 2
Peg Difference	4	Binary		Fixed at Price Scale 2
Last Shares	4	Binary	✓	Number of option contracts filled
Last Price	4	Binary	✓	Price at which the shares or contracts were filled, Fixed Price scale at 4
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
Put Call	1	Binary	✓	The option class : 0 = Put 1 = Call
Open Or Close	1	Alpha Numeric	✓	“O”-Open “C”-Close
Symbol	8	Alpha Numeric	✓	Series Symbol in either OCC or Explicit naming for option order acked, executed, in a pending state canceled, replaced, or rejected.
Strike Date	8	Alpha Numeric	✓	The option expiry date in YYYYMMDD format.
ExecTransType	1	Alpha Numeric	✓	Valid values: ‘0’ = New ‘1’ = Cancel ‘2’ = Correct ‘3’ = Status
Order Reject Reason	1	Alpha Numeric	✓	Only relevant if OrderStatus=Rejected Valid values: ‘1’ = See Text field for reason ‘3’ = See Text field for reason ‘7’ = Order Rejected due to Options Risk Mitigation Breach (Options only)

Execution Report Verbose Format 2.2	Length	Type	Options	Notes and Values
Order Status	1	Alpha Numeric	✓	Identifies the current status of an order. Valid values: '0' = New/Open '1' = Partially Filled '2' = Filled '3' = Expired '4' = Canceled '5' = Replaced '6' = Cancel pending '8' = Rejected 'C' = Self Trade Prevention Cancel 'E' = Pending Replace
Execution Type	1	Alpha Numeric	✓	Describes the specific Execution Report (i.e. Pending Cancel) while OrdStatus will always identify the current order status (i.e. Partially Filled) Valid values: '0' = New '1' = Partial fill '2' = Fill '3' = Done for day '4' = Canceled '5' = Replaced '6' = Pending Cancel (e.g. result of Order Cancel Request) '8' = Rejected '9' = Suspended 'C' = Self Trade Prevention Cancel 'U' = Unsolicited
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Order Type	1	Alpha Numeric	✓	Return from the Original order.
TimeInForce	1	Alpha Numeric	✓	"0" = Day Order "3" = IOC
Account	10	Alpha Numeric	✓	This is returned to the user from the new order message.

Execution Report Verbose Format 2.2	Length	Type	Options	Notes and Values
Text	40	Alpha Numeric	✓	Please note that ARCA sometimes sends a value in the Text (58) field echoing the state of the order. This value is not to be taken as verbatim and should not be coded against. Please refer to the OrdStatus/ExecType values to determine the status of the order. Furthermore, NYSE Arca reserves the right to change the values populated in the Text field at anytime.
Discretion Instruction	1	Alpha Numeric		Returned to user from New Order message.
Liquidity Indicator	1	Alpha Numeric	✓	For Partial Fills and Fills: See Appendix for Values and Definitions (Options)
ExecBroker	5	Alpha Numeric	✓	Route Destination (Options): Boston Options Exchange = BOX Chicago Board Options Exchange = CBO NASDAQ ISE = ISX NASDAQ OMX Options = NDQ NASDAQ PHLX Options = PHO NYSE Arca Options = NYO NYSE American Options = ASE CBOE BZX Options = BATS Chicago Board Options Exchange C2= CB2 NASDAQ BX Options = NASD MIAX Options Exchange = MIAX NASDAQ GEMX (Gemini) = ISE2 NASDAQ MRX (Mercury) = MRCY CBOE EDGX Options = EDGO MPRL = MIAX Pearl EMLD = MIAX Emerald
LastMkt	2	Alpha		See Appendix for Values and Definitions (Options)
Filler	7	Alpha		
Message Terminator	1		✓	ASCII new line character: “\n”
Total	208			

How to interpret the Verbose Execution Report (Variant 2)

Since the Verbose Execution Report encompasses the data of a number of the other messages, the table below summarizes the equivalency of the fields to indicate the different scenarios.

ExecType	ExecTranType	Meaning	Equivalent Short Message	Relevant Fields
0	0	Order Ack	a	ClientOrderID, OrderID, SendingTime, TransactTime, Price, LiquidityIndicator (If candidate for Indicator S)
1 or 2	0	Order Fill	2	ClientOrderID, OrderID, SendingTime, TransactTime, ExecID, LastShares, LastPx, LiquidityIndicator, Side, LastMkt
6		Cancel Request Ack	6	ClientOrderID, OrderID, SendingTime, TransactTime
3 or 4	0	Order Kill	4	ClientOrderID, OrderID, SendingTime, TransactTime
E		Replace Request Ack	E	ClientOrderID, OrderID, SendingTime, TransactTime, LiquidityIndicator (If candidate for Indicator S)
5	0	Order Replaced	5	ClientOrderID, OrderID, SendingTime, TransactTime, LiquidityIndicator (If candidate for Indicator S)
8	0	Order Reject	8	ClientOrderID, SendingTime, TransactTime
2	1 – bust 2 – correct	Trade Bust/Correct	C	ClientOrderID, ExecID, SendingTime, TransactTime, Volume, LastPx, Price
C	C	Order Kill – STP	s	ClientOrderID, OrderID, SendingTime, TransactTime, LastShares, Reason, Text, LiquidityIndicator
Verbose Execution Report Equivalence				

2 = Complex Execution Report Format (Variant 3)

This message is transmitted from the exchange to the client to notify the result of a complex order previously requested by the client. This message will be use for all complex related reports – Order Fill, Bust or Correct, Order Ack, Cancel Ack, and Order Killed regardless of logon verbose message flag setting.

Execution Report Verbose Format 2.3	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'2'
Variant	1	Binary	✓	Value = 3
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the request
Order ID	8	Binary	✓	OrderID assigned by NYSE Arca
Execution ID	8	Binary	✓	Exchange assigned Execution ID. Unique identifier of execution message (64 bit binary). Unique per session, per day.
ExecRefID	8	Binary	✓	Exchange assigned Execution ID
ArcaExID	20	Alpha Numeric	✓	Execution identifier, unique per Exchange, per day.
LegRefID	4	Binary	✓	Complex order Leg Reference ID
Last Shares or Contracts	4	Binary	✓	Number of option contracts filled
Last Price	4	Binary	✓	Price at which the shares or contracts were filled, Fixed Price scale at 4
ExecTransType	1	Alpha Numeric	✓	Valid values: '0' = New '1' = Cancel '2' = Correct '3' = Status '4' = Status
Order Reject Reason	1	Alpha Numeric	✓	Valid values: '0' = See Text field for reason

Execution Report Verbose Format 2.3	Length	Type	Options	Notes and Values
				'1' = See Text field for reason '2' = See Text field for reason '3' = See Text field for reason '7' = Order Rejected due to Options Risk Mitigation Breach
Execution Type	1	Alpha Numeric	✓	Describes the specific Execution Report (i.e. Pending Cancel) while OrdStatus will always identify the current order status (i.e. Partially Filled) Valid values: '0' = New '1' = Partial fill '2' = Fill '3' = Done for day '4' = Canceled '5' = Replaced '6' = Pending Cancel (e.g. result of Order Cancel Request) 'E' = Pending Complex Cancel/Replace (e.g. result of Complex Cancel/Replace Request) '8' = Rejected '9' = Suspended
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Text	40	Alpha Numeric	✓	Please note that ARCA sometimes sends a value in the Text(58) field echoing the state of the order. This value is not to be taken as verbatim and should not be coded against. Please refer to the ExecType values to determine the status of the order. Furthermore, ARCA reserves the right to change the values populated in the Text field at any time.
Liquidity Indicator	1	Alpha Numeric	✓	See Appendix for Values and Definitions (Options)
Filler	6			
Message Terminator	1		✓	ASCII new line character: "\n"
Total	136			

How to interpret the Complex Execution Report (Variant 3)

Since the Complex Execution Report encompasses the data of a number of the other messages, the table below summarizes the equivalency of the fields to indicate the different scenarios.

ExecType	ExecTranType	Meaning	Equivalent Short Message	Relevant Fields
0		Complex Order Ack		ClientOrderID, OrderID, SendingTime, TransactTime
1 or 2	0	Complex Order Fill		ClientOrderID, OrderID, SendingTime, TransactTime, ExecID, LastShares, LastPx, LiquidityIndicator, Side
6		Cancel Request Ack		ClientOrderID, OrderID, SendingTime, TransactTime
3 or 4		Order Kill		ClientOrderID, OrderID, SendingTime, TransactTime
8		Order Reject		ClientOrderID, SendingTime, TransactTime
2	1 – bust 2 – correct	Trade Bust/Correct		ClientOrderID, ExecID, SendingTime, TransactTime, Volume, LastPx, Price

2 = Options Cross Execution Report (Variant 4)

This message is transmitted from the exchange to the client to notify the result of a options cross order previously requested by the client. This message will be used for all options cross related reports – Order Fill, Bust or Correct, Order Ack, Cancel Ack, and Order Killed regardless of logon verbose message flag setting.

Options Cross Execution Report 2.4	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'2'
Variant	1	Binary	✓	Value = 4
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number

Options Cross Execution Report 2.4	Length	Type	Options	Notes and Values
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
ClOrdID	4	Binary	✓	Client order ID of the request
Order ID	8	Binary	✓	OrderID assigned by NYSE Arca
Execution ID	8	Binary	✓	Exchange assigned Execution ID. Unique identifier of execution message (64 bit binary). Unique per session, per day.
ExecRefID	8	Binary	✓	Exchange assigned Execution ID
ArcaExID	20	Alpha Numeric	✓	Execution identifier, unique per Exchange, per day.
LegRefID	4	Binary	✓	Complex order Leg Reference ID
Last Shares or Contracts	4	Binary	✓	Number of option contracts filled
Last Price	4	Binary	✓	Price at which the shares or contracts were filled, Fixed Price scale at 4
CrossID	4	Binary	✓	Identifier for a cross order.
ExecTransType	1	Alpha Numeric	✓	Valid values: '0' = New '1' = Cancel '2' = Correct '3' = Status '4' = Status
Order Reject Reason	1	Alpha Numeric	✓	Valid values: '1' = See Text field for reason '3' = See Text field for reason
Execution Type	1	Alpha Numeric	✓	Describes the specific Execution Report (i.e. Pending Cancel) while OrdStatus will always identify the current order status (i.e. Partially Filled) Valid values: '0' = New

Options Cross Execution Report 2.4	Length	Type	Options	Notes and Values
				'1' = Partial fill '2' = Fill '3' = Done for day '4' = Canceled '5' = Replaced '6' = Pending Cancel (e.g. result of Order Cancel Request) '8' = Rejected '9' = Suspended
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Text	40	Alpha Numeric	✓	Please note that ARCA sometimes sends a value in the Text(58) field echoing the state of the order. This value is not to be taken as verbatim and should not be coded against. Please refer to the ExecType values to determine the status of the order. Furthermore, ARCA reserves the right to change the values populated in the Text field at any time.
Liquidity Indicator	1	Alpha Numeric	✓	See Appendix for Values and Definitions (Options)
Filler	2			
Message Terminator	1		✓	ASCII new line character: "¥n"
Total	136			

B = Order Cross (Options) – Single (Variant 1)

New Order Cross B.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'B'
Variant	1	Binary	✓	1
Length	2	Binary	✓	Binary Length of Message

New Order Cross B.1	Length	Type	Options	Notes and Values
Sequence Number	4	Binary	✓	Client assigned sequence number
Symbol	8	Alpha	✓	Options Explicit Symbol
Strike Date	8	Alpha	✓	YYYYMMDD
Put or Call	1	Binary	✓	0 = Put, 1 = Call
StrikePrice	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
Company GroupID	5	Alpha Numeric	✓	The Company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
DeliverToCompID	5	Alpha Numeric	✓	The ID of the market maker to route a Directed order to.
SpecialOrderType	1	Alpha Numeric	✓	F = CUBE Facilitation (minimum OrderQty = 50 contracts) P = CUBE Price Improvement (minimum OrderQty = 1 contract) S = AON CUBE Solicitation (minimum OrderQty = 500 contracts)* Q = Qualified Contingent Cross "QCC" (minimum OrderQty = 1000 contracts) *Covered side order is treated as All or None.
PriceScale	1	Alpha Numeric	✓	"0" through "4"
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
CrossID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
OrderQty	4	Binary	✓	The number of contracts for this order.

New Order Cross B.1	Length	Type	Options	Notes and Values
ExecInst	1	Alpha Numeric	✓	Reserved for future use.
Time In Force	1	Alpha Numeric	✓	"3" = IOC

Side Details (Must have 2)

New Order Cross B.1	Length	Type	Options	Notes and Values
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
Price	4	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway.
Side	1	Alpha Numeric	✓	"1" = Buy "2" = Sell
Covered or UnCovered	1	Alpha Numeric	✓	'E' – Exposed 'C' – Covered

New Order Cross B.1	Length	Type	Options	Notes and Values
Order Type	1	Alpha Numeric	✓	Qualified Contingent Cross (QCC): <ul style="list-style-type: none"> Initiating side – may be either: <ul style="list-style-type: none"> 1 = Market 2 = Limit Contra side – may be either: <ul style="list-style-type: none"> 1 = Market 2 = Limit Initiating and contra side OrdType need to be the same value CUBE (SpecialOrderType = F, P or S): <ul style="list-style-type: none"> Initiating side – must be 2 = Limit Contra side – may be any of: <ul style="list-style-type: none"> 1 = Market* 2 = Limit 9 = AutoMatch Limit* *Not available for SpecialOrderType = S
CustomerOrFirm	1	Alpha Numeric	✓	“0” = Customer “1” = Firm “2” = Broker “3” = Market Maker “8” = Professional Customer CUBE (SpecialOrderType = F, P or S) – Contra side CustomerOrFirm cannot be set to 0 = Customer
OpenClose	1	Alpha Numeric	✓	‘O’ = Open, ‘C’ = Close
LocalOrAway	1	Binary	✓	1= Local Options MM 2= Away MM for another options exchange 3= Adds Customer Sub-Account Suffix (For use “away” market makers only)

New Order Cross B.1	Length	Type	Options	Notes and Values
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
ClearingAccount	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.
Optional Data	16	Alpha	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	164			

B = Order Cross – Complex (Variant 2)

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'B'
Variant	1	Binary	✓	2
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
Company GroupID	5	Alpha Numeric	✓	The Company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
DeliverToCompID	5	Alpha Numeric	✓	The ID of the market maker to route a Directed order to.
SpecialOrderType	1	Alpha Numeric	✓	<p>F = CUBE Facilitation (minimum OrderQty = 50 contracts)</p> <p>P = CUBE Price Improvement (minimum OrderQty = 1 contract)</p> <p>S = AON CUBE Solicitation (minimum OrderQty = 500 contracts)*</p> <p>Q = Qualified Contingent Cross "QCC" (minimum OrderQty = 1000 contracts)</p> <p>*Covered side order is treated as All or None.</p>
PriceScale	1	Alpha Numeric	✓	"0" through "4"
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
CrossID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
OrderQty	4	Binary	✓	The number of contracts for this order.

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
ExecInst	1	Alpha Numeric	✓	Reserved for future use.
Time In Force	1	Alpha Numeric	✓	"3" = IOC

Side Details (Must have 2)

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
Price	8	Binary	✓	The price, as a long value. Price is scaled based on the Price Scale field. Prices with significant digits (numbers other than 0) in the 5 th decimal place or beyond will cause the order to be rejected by the gateway. Max Price: 9999.99 / Min Price: -9999.99
Covered or UnCovered	1	Alpha Numeric	✓	'E' - Exposed 'C' - Covered
Order Type	1	Alpha Numeric	✓	Qualified Contingent Cross (QCC/ SpecialOrderType = Q): <ul style="list-style-type: none"> Initiating side – must be 2 = Limit Contra side – must be 2 = Limit CUBE (SpecialOrderType = F, P or S): <ul style="list-style-type: none"> Initiating side – must be 2 = Limit Contra side – may be either: <ul style="list-style-type: none"> 2 = Limit 9 = AutoMatch Limit* *Not available for SpecialOrderType = S

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
CustomerOrFirm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer CUBE (SpecialOrderType = F, P or S) – Contra side CustomerOrFirm cannot be set to 0 = Customer
LocalOrAway	1	Binary	✓	1= Local Options MM 2= Away MM for another options exchange 3= Adds Customer Sub-Account Suffix (For use by "away" market makers only)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm. This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
ClearingAccount	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.
StockLegGiveup	5	Alpha Numeric	✓	
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ',' (comma), ';' (semicolon), ' ' (pipe), '@' (at symbol) and '“' (double quotation mark)

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
Optional Data	16	Alpha	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
NumberOfLegs	1	Binary	✓	Up to 5 Legs (including 1 Equity Leg)

Leg Details (Must have 5 per Side)

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
LegRatioQty	2	Binary	✓	The ratio of quantity for this individual leg relative to the order quantity
Symbol	8	Alpha	✓	Options Explicit Symbol
Strike Date	8	Alpha	✓	YYYYMMDD
SecurityType	8	Alpha	✓	Indicates type security. Valid security type “OPT”
Side	1	Alpha Numeric	✓	‘1’ = Buy, ‘2’ = Sell
PutOrCall	1	Binary	✓	‘0’ = Put, ‘1’ = Call
OpenClose	1	Alpha Numeric	✓	‘O’ = Open, ‘C’ = Close

Order Cross (Complex) B.2	Length	Type	Options	Notes and Values
Filler	7			
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	536			

B = Order Cross – Complex (Using Complex Symbol) - (Variant 3)

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘B’
Variant	1	Binary	✓	3
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
CompanyGroupID	5	Alpha Numeric	✓	The Company ID for the firm that is entering the orders. If the connecting firm is a service bureau, this must be the company ID of the firm that is entering order through the service bureau.
DeliverToCompID	5	Alpha Numeric	✓	The ID of the market maker to route a Directed order to.
Symbol	21	Alpha	✓	Complex Symbol
SpecialOrderType	1	Alpha Numeric	✓	<p>F = CUBE Facilitation (minimum OrderQty = 50 contracts)</p> <p>P = CUBE Price Improvement (minimum OrderQty = 1 contract)</p> <p>S = AON CUBE Solicitation (minimum OrderQty = 500 contracts)*</p> <p>Q = Qualified Contingent Cross “QCC” (minimum OrderQty = 1000 contracts)</p> <p>*Covered side order is treated as All or None.</p>

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
PriceScale	1	Alpha Numeric	✓	"0" through "4"
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
CrossID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
OrderQty	4	Binary	✓	The number of contracts for this order.
ExecInst	1	Alpha Numeric	✓	Reserved for future use.
Time In Force	1	Alpha Numeric	✓	"3" = IOC

Side Details (Must have 2)

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
ClOrdID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique per session per day. If duplicate orders IDs are received, the duplicate order will be rejected.
Price	8	Binary	✓	<p>The price, as a long value. Price is scaled based on the Price Scale field.</p> <p>Prices with significant digits (numbers other than 0) in the 5th decimal place or beyond will cause the order to be rejected by the gateway.</p> <p>Max Price: 9999.99 / Min Price: -9999.99</p>

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
Covered Or Uncovered	1	Alpha Numeric	✓	'E' = Exposed 'C' = Covered
Order Type	1	Alpha Numeric	✓	Qualified Contingent Cross (QCC/SpecialOrderType = Q): <ul style="list-style-type: none"> Initiating side – must be 2 = Limit Contra side – must be 2 = Limit CUBE (SpecialOrderType = F, P or S): <ul style="list-style-type: none"> Initiating side – must be 2 = Limit Contra side – may be either: <ul style="list-style-type: none"> 2 = Limit 9 = AutoMatch Limit* *Not available for SpecialOrderType = S
Side	1	Alpha Numeric	✓	1 = Buy 2 = Sell
Short Sell Indicator	1	Alpha Numeric	✓	"Y" = Short Sell "N" = Not a Short Sell
CustomerOrFirm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer CUBE (SpecialOrderType = F, P or S) – Contra side CustomerOrFirm cannot be set to 0 = Customer
LocalOrAway	1	Binary	✓	1= Local Options MM 2= Away MM for another options exchange 3= Adds Customer Sub-Account Suffix (For use by "away" market makers only)
Clearing Firm	5	Alpha	✓	The OCC code for the clearing firm to use for an option order. This is typically the default clearing firm for all orders for this brokerage firm.

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
				This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Clearing Account	5	Alpha	✓	The clearing give-up subaccount may be specified here. (Optional Field)
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.
StockLegGiveup	5	Alpha Numeric	✓	
Account	10	Alpha Numeric	✓	Customer defined up to 10 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Optional Data	16	Alpha	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)

Leg Details (Must have 5 per Side)

Order Cross (Complex) B.3	Length	Type	Options	Notes and Values
LegRefID	4	Binary	✓	A client-assigned ID for this order. Valid values are 1 to 4,294,967,294. This must be unique for each leg of a complex order.
OpenClose	1	Alpha Numeric	✓	‘O’ = Open ‘C’ = Close

Filler	8			
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	240			

Minimum Order Size and Exposure Time parameters by Crossing Order Type

Crossing Order Type	Minimum Order Size	Exposure Time
CUBE Facilitation (SpecialOrderType = F)	50 contracts	100 – 105 millisecond random timer
CUBE Price Improvement (SpecialOrderType = P)	1 contract	100 – 105 millisecond random timer
AON CUBE Solicitation (SpecialOrderType = S)	500 contracts	100 – 105 millisecond random timer
Qualified Contingent Cross (SpecialOrdType = Q)	1,000 contracts	N/A

CUBE is available on NYSE American Options, QCC is available on NYSE American Options and NYSE Arca Options.

J = Allocation (Options) - Variant 1

The Post-Trade Allocation message (PTA) can be used to split one CUBE trade into a maximum of 10 smaller trades, and assign CMTAs for each of the smaller trades and/or individually modify the following characteristics:

- MMID (SenderSubID)
- OpenClose indicator
- CMTA (ClearingFirm)
- CustomerOrFirm (cannot be changed from customer to firm)
- Optional Data

The PTA message can only be used to split CUBE trades from the current day and only one trade can be split at a time. The entire quantity of the trade must be re-allocated. A single Acknowledgement message responds to a PTA message, regardless of the number of allocations defined.

When entering a PTA message:

- **ExecID** must be populated with the ArcaExID value from the original transaction (NOT the ExecID value).
- The sum of all **AllocQty** in the repeating groups must equal the original trade quantity.
- **AllocQty**, **OpenClose** and **CustomerOrFirm** are the only required repeating group fields.

- The remaining quantity to be left unchanged must be included in the repeating group with its original information and new quantity.
 - If there is an invalid value in any repeating group, the entire PTA message will be rejected.
 - A trade can only be allocated once.
 - A trade cannot be allocated after it has been adjusted in GEMS.
- * If a trade was split in GEMS and further adjusted with a PTA message, then volume will be misrepresented in GEMS and will require additional adjustments in GEMS to reconcile.

Allocation J.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'J'
Variant	1	Binary	✓	1
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
Symbol	8	Alpha	✓	Options Explicit Symbol
Strike Date	8	Alpha	✓	The option expiry date in YYYYMMDD format.
StrikePrice	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
AllocID	4	Binary	✓	Unique Identifier for the PTA Message
ExecID	8	Binary	✓	Must be populated with the ArcaExID from the original transaction (NOT the ExecID from the original transaction).
ClOrdID	4	Binary	✓	ClOrdID of the order.
OrderQty	4	Binary	✓	Total number of contracts in the original trade to be fully allocated in repeating groups.
GroupID	5	Alpha Numeric	✓	The Company ID for the firm that is entering the PTA message.
DeliverToCompID	5		✓	Not Used
ExDestination	2	Binary	✓	104 = NYSE American Options

PutorCall	1	Binary	✓	'0' = Put '1' = Call
Side	1	Alpha Numeric	✓	Side of the Contra order '1' = Buy '2' = Sell
StrategyIndicator	1	Alpha Numeric	✓	'2'
NumAllocs	1	Binary	✓	Number of repeating groups. Max of 10

Repeating group (Max of 10)

Allocation J.1	Length	Type	Options	Notes and Values
AllocQty	4	Binary	✓	Number of contracts to allocate
CustomerOrFirm	1	Alpha Numeric	✓	"0" = Customer "1" = Firm "2" = Broker "3" = Market Maker "8" = Professional Customer
OpenClose	1	Alpha Numeric	✓	'O' = Open 'C' = Close
LocalOrAwayMM	1	Binary	✓	1 = Local Options MM 2 = Away MM for another options exchange. 3 = Adds Customer Sub-Account Suffix (For use by "away" market makers only.
SenderSubID	5	Alpha Numeric	✓	User-defined information that is not validated. Note: Firms entering orders as market makers must send their MMID in this field if this variant is used.

ClearingFirm	5	Alpha	✓	This field may also be used to specify a CMTA. If the value in this field does not match the default clearing for the session, it will be sent to the OCC as a CMTA. (Optional Field)
Filler	5		✓	
Optional Data	16	Alpha	✓	Customer defined up to 16 characters Characters in ASCII range 32-126 are allowed, except ‘,’ (comma), ‘;’ (semicolon), ‘ ’ (pipe), ‘@’ (at symbol) and ‘ “ ’ (double quotation mark)
Filler	2		✓	
Filler	7		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	472			

P = Allocation Ack (Options) - Variant 1

Allocation P.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘P’
Variant	1	Binary	✓	1
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
AllocID	4	Binary	✓	Unique Identifier for Allocation Message
AccountID	5	Alpha Numeric	✓	

AllocStatus	1	Alpha	✓	
Text	40	Alpha Numeric	✓	Information about the Allocation
Filler	5		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	80			

R = New Complex Symbol Request (Complex) - Variant 1

New Complex Symbol Request R.1	Len	Type	Opt	Notes and Values
Message Type	1	Alpha Numeric	✓	‘R’
Variant	1	Binary	✓	1
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
CompanyGroupID	5	Alpha Numeric	✓	GroupID of firm making the symbol request
SymbolRefID	4	Numeric	✓	A client-assigned unique identifier of complex symbol request.
ExDestination	2	Binary	✓	See Appendix for the Exchange Codes.
NumberOfLegs	1	Binary	✓	Up to 5 Legs

Complex Option Leg Symbol Requests (Up to 5)

New Complex Symbol Request R.1	Len	Type	Opt	Notes and Values
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
LegRatioQty	2	Binary	✓	The ratio of quantity for this individual leg
Symbol	8	Alpha	✓	Options Explicit Symbol
Strike Date	8	Alpha	✓	YYYYMMDD
SecurityType	8	Alpha	✓	Indicates type security. Valid security type “OPT”
Side	1	Alpha Numeric	✓	‘1’ = Buy, ‘2’ = Sell
PutOrCall	1	Binary	✓	‘0’ = Put, ‘1’ = Call
Pad	1		✓	

New Complex Symbol Request R.1	Len	Type	Opt	Notes and Values
Filler	6		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	192			

r = New Complex Symbol Ack (Complex) - Variant 1

New Complex Symbol Request Ack (r.1)	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘r’
Variant	1	Binary	✓	1
Length	2	Binary	✓	Binary Length of Message
Sequence Number	4	Binary	✓	Client assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
TransactionTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Symbol	21	Alpha	✓	Complex Symbol
SymbolRefID	4	Numeric	✓	A client-assigned unique identifier of complex symbol request
Side	1	Alpha Numeric	✓	‘1’ = Buy ‘2’ = Sell
RequestStatus	1	Binary	✓	C – Complex symbol Created E – Complex symbol already exists R – Complex symbol Rejected
NumberOfLegs	1	Binary	✓	Up to 5 Legs

Complex Symbol Legs (Up to 5)

New Complex Symbol Request Ack (r.1)	Len	Type	Opt	Notes and Values
Strike Price	4	Binary	✓	The strike price for an option, as a long value with a fixed scale of 4.
LegRatioQty	2	Binary	✓	The ratio of quantity for this individual leg
Symbol	8	Alpha	✓	Options Explicit Symbol
Strike Date	8	Alpha	✓	YYYYMMDD

SecurityType	8	Alpha	✓	Indicates type security. Valid security type "OPT"
Side	1	Alpha Numeric	✓	'1' = Buy, '2' = Sell
PutOrCall	1	Binary	✓	'0' = Put, '1' = Call
Pad	1		✓	

New Complex Symbol Request Ack (r.1)	Len	Type	Opt	Notes and Values
Filler	2		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: "\n"
Total	220			

5 Risk Mitigation (Options)

The NYSE American and NYSE Arca Options markets configure all Order Sending Firms using the UGW Binary Gateway to use Options Risk Mitigation (RM) controls by default. These activity-based controls are designed to help protect firms from excessive executions due to unusually rapid trading activity, and are configured per underlying symbol for a given firm's ATPID/OTPID. Once a configured risk mitigation limit is reached, the Options market will cancel all the firm's open orders for the affected symbol(s).

Firms may change their risk settings via gateway request or manually through the Customer Management Tool (CMT) user interface, but are not able to completely unsubscribe from Risk Mitigation using either product. For more information, please contact the Options Trade Desk.

- All Options order types as well as both single and complex orders are included in Options RM calculations.
- Order Sending Firms have a choice of configuring risk settings at either of two levels from the gateway – individually per underlying symbol, or for all underlying symbols traded by the firm using their ATPID/OTPID via a single request message.
- Options RM settings are persisted on an overnight basis and remain in effect until changed by the Order Sending Firm.

Applicability to Orders Only

The UGW Binary Gateway allows firms to enter options orders only – not quotes. Therefore, these Options RM controls will only take into account a firm's order activity.

A similar solution is available to Market Maker quotes via the Options Market Maker Direct Gateway. However, those controls are entirely separate and only take into account a firm's quote activity.

RM limits must be set separately for orders and quotes, and risk calculations will not be aggregated between the two.

Minimum and Maximum Risk Limits

For each RM Type, the Exchange may set a minimum and maximum risk limit ('UserLimit'). All Order Sending Firms will be able to select a UserLimit value at or within this range.

Auctions and Core Trading

Risk mitigation will apply during opening and post-halt auctions as well as core trading sessions. OTP/ATP Order Sending Firms will be able to adjust their risk limits at any time. They may also query the status of their risk settings at any given time.

Risk Mitigation Types

Order Sending Firms may select from the following different types of Risk Mitigation controls:

1. **Transaction Based** counts the number of transactions that occur over a 100 millisecond time period.

2. **Volume Based** counts the number of contracts executed over a 100 millisecond time period.
3. **Percentage Based** calculates the number of contracts executed as a percent of order quantity over a 100 millisecond time period. This percentage is calculated for each of the firm's orders for a given symbol, and these individual percentages are summed and compared against the configured risk limit.

Example of Percentage Based: If a firm has four open orders for a given underlying symbol on the book, and specifies its percentage based risk limit for that underlying symbol to be 100%, its risk level would be calculated as follows:

	Order Quantity	# of Contracts Executed	Percentage Calculation for the Underlying Symbol
Order 1	100	40	40%
Order 2	50	20	40%
Order 3	200	20	10%
Order 4	150	15	10%
Total	500	95	100%

When the aggregate percentage of contracts executed among all the firm's orders for this underlying symbol during the 100 millisecond time period reaches the specified limit of 100%, Percentage Based RM would be breached, and the remaining open quantity in the four orders would be cancelled by the Exchange. In this case, that occurs when 95 contracts are executed.

Risk Mitigation – Per Underlying Symbol

Configure RM – Per Underlying Symbol

To configure risk settings for a particular underlying symbol for the firm's TPID, send a Risk Mitigation Request specifying the symbol. Risk setting updates can be sent on just one gateway session even if orders for the same underlying symbol will be sent from different sessions using the same TPID.

The example below is for Volume Based Risk Mitigation:

- Symbol = valid underlying symbol
- Type = V
- Action = E (updates RM/enables underlying for trading)
- UserLimit = valid risk limit value for the specified underlying symbol (depends on which 'Type' is selected)

Upon receipt of a Symbol-level risk request, the Options trading platform will validate the request and send back to the customer gateway session a Risk Mitigation Request Acknowledgement message ('X') with a status code ('RequestStatus'). This code indicates whether the trading platform accepted and successfully applied the request, or rejected it.

Query Current RM Settings – Per Underlying Symbol Only

To query the current risk settings and order entry status for a particular underlying symbol for the firm's TPID, send a Risk Mitigation Request with:

- Symbol = valid underlying symbol

- UserLimit = null. (If sent, must be a valid value but will be ignored.)
- Type = null. (If sent, must be a valid value but will be ignored.)
- Action = N

Request to Cancel All Orders and Disable Order Entry – Per Underlying Symbol Only

Order Sending Firms may simultaneously cancel all open orders as well as disable order entry for an underlying symbol upon request, by sending the field values below. This request will instruct the Options trading platform to cancel all the firm's eligible open orders from all gateway sessions for that underlying. It will also disable the firm's ability to enter new orders for the underlying symbol.

To breach RM and disable order entry for a particular underlying symbol, send a Risk Mitigation Request with:

- Symbol = valid underlying symbol
- UserLimit = null. (If sent, must be a valid value but will be ignored.)
- Type = null. (If sent, must be a valid value but will be ignored.)
- Action = D

Once the Options trading platform accepts and processes the request, a Risk Alert message will be sent out to all gateway sessions that at any point in the current trading day sent an order in the breached underlying symbol (sessions which sent an order for any symbols trading on the same matching engine as the breached symbol will also receive an alert message). However, no Order Killed messages will be sent out for the individual cancelled orders.

The Alert message serves as indication that the request was processed and that the firm's orders in the underlying symbol have been cancelled by the Exchange.

To re-enter the market, the Order Sending Firm will be required to re-enable order entry for the underlying symbol. See "Update Risk Limits/Enable Order Entry" below for instructions.

Unsubscribe from Risk Mitigation – Per Underlying Symbol Only

Currently, Order Sending Firms may elect to unsubscribe from Options RM for a particular underlying symbol for the firm's TPID via gateway request. To unsubscribe, send a Risk Mitigation Request with:

- Symbol = valid underlying symbol
- Type = X – Disable
- Action = E

Risk Mitigation – Firm Level (All Underlying Symbols for a TPID)

To configure risk settings for all underlying symbols traded by a firm under their OTPID/ATPID, send a Risk Mitigation Request with the Symbol field set to null.

The example below is for Volume Based Risk Mitigation:

- Symbol = null
- Type = V
- Action = E (updates RM/enables underlying for trading)
- UserLimit = valid risk limit value (depends on which 'Type' is selected)

Immediately upon receiving a firm level risk request, the gateway will generate a single Risk Mitigation Request Acknowledgement message ('x') and send it back to the customer before passing the request to the trading platform. All this message indicates is that the gateway received the request. The Acknowledgement message does NOT guarantee that the request will pass business validation, be accepted by the trading platform, or be successfully processed for all symbols.

Furthermore, if the request is subsequently rejected by the trading platform because it fails business validation (e.g. the customer sends an invalid value for 'Action'), or in a very rare case updates some but not all symbols due to system error – a reject message will NOT be sent back to the customer.

To verify that a firm-level risk request was accepted and successfully applied, Order Sending Firms must use the Client Management Tool (CMT) user interface or query their settings on a per underlying basis through the gateway.

Alternatively, firms that wish to receive definitive Acknowledgements from the trading platform should use Underlying Symbol-level risk requests only.

Risk Mitigation Breach Event

The following workflow details an Options RM breach event, where a firm's execution activity breaches their configured UserLimit for a given underlying symbol:

- Options RM calculations are done on a post-trade basis. Therefore, please note that an execution that would breach the threshold will not be prevented before the trade occurs.
- Once the limit for an underlying symbol has been breached, all eligible open orders for that underlying will be cancelled and any new incoming orders for that symbol will be rejected with 'Text' = "Firm GRMP Disabled".
- The Options trading platform will generate a Risk Mitigation Alert message ('7') to the Order Sending Firm. The Alert message will be sent to all gateway sessions that had open orders in the affected symbol.
- For UGW Binary users, Order Killed messages will be NOT be sent to the firm for the individual cancelled orders.
- The Alert message serves as indication that the RM mechanism was breached and that the firm's orders in the underlying symbol have been cancelled by the Exchange.

To re-enter the market, the Order Sending Firm will be required to re-enable order entry for the underlying symbol. See "Update Risk Limits/Enable Order Entry" below for instructions.

Update Risk Limits & Re-Enable Order Entry

Following an RM breach event, Order Sending Firms may simultaneously update risk limits for underlying symbols as well as re-enable order entry for those symbols by sending the field values below.

Per Underlying Symbol	Firm Level – OTPID/ATPID (All Underlying Symbols)
Send a Risk Mitigation Request with: <ul style="list-style-type: none"> • Symbol = valid underlying symbol • Type = T, P, V, 1, 2, or 3 • Action = E • UserLimit = valid risk limit value (depends on which 'Type' is selected). This value will reflect the new limit for the symbol upon re-enabling order entry 	Send a Risk Mitigation Request with: <ul style="list-style-type: none"> • Symbol = null • Type = T, P, V, 1, 2, or 3 • Action = E • UserLimit = valid risk limit value (depends on which 'Type' is selected). This value will reflect the new limit for all symbols traded by the firm upon re-enabling order entry

Gateway Session Disconnects

Risk Mitigation settings will persist following a customer session disconnect.

Orders entered on a customer gateway session that subsequently disconnected will be cancelled only if the session has the 'Cancel on Disconnect' property on.

Global Risk Mitigation

In addition to the above, NYSE American and NYSE Arca Options offer Order Sending Firms a Global Risk Mitigation control (Global RM). Global RM allows a firm to specify an aggregate limit for the number of symbol-level risk breaches that may occur over a fixed 100 millisecond time frame. Firms must contact the Options Trade Desk to establish their Global RM limit.

If the Global RM limit is breached, RM will be breached for all underlying symbols traded under the firm's ATPID/OTPID. All the firm's cancel eligible open orders for all symbols will be cancelled by the Exchange, and order entry by the firm will be disabled for all symbols.

- The Exchange sets a min/max threshold range for the Global RM limit, and firms can select a value within that range.
- Global RM is not dependent on the Type of risk mitigation configured for each underlying symbol.
 - Transaction, Volume, or Percentage of order
- Aggregated at OTPID/ATPID level
- Following a Global RM event, UGW Binary users will receive an RM Alert for each underlying symbol. Additionally, both new orders and new Risk Mitigation Requests will be rejected with text "Firm GRMP Disabled".
- To re-enter the market after a Global RM event, the firm will need to submit a request by email to the Options Trade Desk at tradingox@nyse.com (order entry cannot be re-enabled through the gateway).
- Once globally re-enabled, firms will be able to re-enable each underlying symbol via gateway request.

X = Risk Mitigation Request Message (Options) - Variant 1

This message is used to configure/update risk mitigation parameters, enable/disable order entry, and query current risk settings for underlying symbols.

Risk Management Request X.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'X'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Client-assigned sequence number
Company GroupID	5	Alpha Numeric	✓	The Company ID for the firm that is entering the Risk Mitigation Request.
Symbol	8	Alpha	✓	Request per Underlying Symbol (for the firm's TPID) – populate with Options Explicit Symbol Firm Level Request (ALL underlying symbols for the firm's TPID) – set to null
RiskMgmtID	4	Binary	✓	Customer defined ID Value, similar to ClOrdID, but will not validate for uniqueness.
UserLimit	4	Binary	✓	Meaning of this value depends on which Type is selected. Valid values are 0 to 999,999,999. Set to null when 'Action' = 'D' or 'N'.
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
Type	1	Alpha Numeric	✓	T – Trade based risk mitigation P – Percentage of orders risk mitigation V – Volume based risk mitigation 1 – Trade based risk mitigation, excluding IOC orders 2 – Percentage of orders risk mitigation, excluding IOC orders 3 – Volume based risk mitigation, excluding IOC orders X – Unsubscribe from Risk Mitigation Set to null when 'Action' = 'D' or 'N'.

Action	1	Alpha Numeric	✓	E – Configure/Update Risk Mitigation Settings and Enable Order Entry D – Request to Cancel All Open Orders and Disable Order Entry for the Underlying Symbol N – Query Current Risk Mitigation Settings, and Retain Current Settings for the Underlying Symbol
Filler	2		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	36			

x = Risk Mitigation Request Ack (Options) - Variant 1

Risk Management Ack x.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	‘x’
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message
Sequence Number	4	Binary	✓	Exchange-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Symbol	8	Alpha	✓	Options Explicit Symbol
RiskMgmtID	4	Binary	✓	Customer defined ID value returned from Risk Mitigation Request
UserLimit	4	Binary	✓	Meaning of this value depends on which Type is selected. Valid values are 0 to 999,999,999.
Type	1	Alpha Numeric	✓	T – Trade based risk mitigation P – Percentage of orders risk mitigation V – Volume based risk mitigation 1 – Trade based risk mitigation, excluding IOC orders 2 – Percentage of orders risk mitigation, excluding IOC orders 3 – Volume based risk mitigation, excluding IOC orders

				<p>X – Unsubscribe from Risk Mitigation</p> <p>As a response to risk request with Action = E, this represents the newly updated risk settings as a result of customer request.</p> <p>As a response to a risk request with Action = D or N, this value will represent the currently configured risk settings.</p>
ActionStatus	1	Alpha Numeric	✓	<p>E – Underlying Symbol Configured for Risk Mitigation and Order Entry Enabled</p> <p>D – Cancel All Open Orders and Disable Order Entry for the Underlying Symbol (due to user request)</p> <p>B – Underlying Symbol Breached Risk Mitigation and Order Entry Disabled (due to execution activity)</p> <p>As a response to risk request with Action = E, this represents the newly updated risk settings as a result of customer request.</p> <p>As a response to a risk request with Action = D or N, this value will represent the currently configured risk settings.</p>
RequestStatus	1	Alpha Numeric	✓	<p>'0' – Success</p> <p>'1' – Error</p>
Text	40	Alpha Numeric	✓	Information about the Risk Mitigation Request
Filler	4		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	80			

7 = Risk Mitigation Alert Message (Options) - Variant 1

Risk Management Alert 7.1	Length	Type	Options	Notes and Values
Message Type	1	Alpha Numeric	✓	'7'
Variant	1	Binary	✓	Value = 1
Length	2	Binary	✓	Binary length of the message

Sequence Number	4	Binary	✓	Exchange-assigned sequence number
SendingTime	8	Binary	✓	UTC Time the message was sent in microseconds since Midnight
Symbol	8	Alpha	✓	Options Explicit Symbol
UserLimit	4	Binary	✓	Value depends on what Type is selected
ExDestination	2	Binary	✓	Indicates the Exchange code of the execution venue for the order. See Appendix for the Exchange Codes.
Type	1	Alpha Numeric	✓	T – Trade based risk mitigation P – Percentage of orders risk mitigation V – Volume based risk mitigation 1 – Trade based risk mitigation, excluding IOC orders 2 – Percentage of orders risk mitigation, excluding IOC orders 3 – Volume based risk mitigation, excluding IOC orders
Status	1	Alpha Numeric	✓	D – Cancel All Open Orders and Disable Order Entry for the Underlying Symbol (due to user request) B – Underlying Symbol Breached Risk Mitigation and Order Entry Disabled (due to execution activity)
Filler	7		✓	
Message Terminator	1	Alpha	✓	ASCII new line character: “\n”
Total	40			

6 NYSE Arca Options Order Types

Order Type	Fields and Values	Description	Available Sessions
Market Order	OrdType = 1	An order to buy or sell that is to be executed at the best price obtainable.	Market Auction Core
Limit Order	OrdType = 2	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security.	Core
PNP (post no preference)	OrdType = 2 ExecInst = 6	A limit order to buy or sell that is to be executed in whole or in part on Arca Options. The portion not executed is posted in the ArcaEx Book without routing any portion of the order to another market center. PNP orders that would lock or cross the NBBO are cancelled. **Note: PNP orders entered with Time in Force of IOC will be accepted, and will be handled as an IOC order – will never be posted to the book.	Core
Re-pricing Post No Preference (PNP)	OrdType = 2 TimeInForce = 0 (Day) ExecInst = 6 Plus, must specify either with or without Display Price Update Acks: ExtendedPNP = S - without Display Price Update Acks OR ExtendedPNP = A - WITH Display Price Update Acks	PNP orders are Limit Orders that are to be executed in whole or in part on NYSE Arca Options or NYSE American Options. Any portion not executed is posted to the book without routing any portion of the order to another exchange. When locking/crossing away markets, the Re-pricing PNP will display one MPV worse than the contra-side NBBO but have a working price equal to the contra-side NBBO. For description of Display Price Update Acks, see section, “Display Price Update Acknowledgement (Optional) - for Re-Pricing PNP & Re-Pricing ALO Orders.”	Core
Stop Order *Must use New Order Variant 3 (Verbose)	OrdType (40) = 3 (Stop) StopPx (99) = Stop Price	A Stop Order becomes an active Market Order when the stop price is reached. A Stop Order to buy is triggered when the option is bid on NYSE Arca Options or trades on NYSE Arca Options (or any exchange) at or above the specified stop price. A Stop Order to sell is activated when the option is offered on NYSE Arca Options or trades on NYSE Arca Options (or any exchange) at or below the specified stop price. Order execution is fully automated. A stop order (elected or unelected) may be cancel/replaced to a regular market or limit order by sending a cancel/replace and specifying the new order type and limit price (if applicable). Once elected, a stop order may not be “re-stopped” via cancel/replace.	Core

Order Type	Fields and Values	Description	Available Sessions
Stop Limit Order *Must use New Order Variant 3 (Verbose)	OrdType (40) = 3 (Stop) Price (44) = Limit Price StopPx (99) = Stop Limit Price	<p>A Stop Limit Order becomes an active Limit Order when the stop price is reached. A Stop Limit Order to buy is triggered when the option is bid or trades on NYSE Arca Options (or any exchange) at or above the specific stop price. A Stop Limit Order to sell becomes a Limit Order when the option is offered or trades on NYSE Arca Options (or any exchange) at or below the specified stop price. Order execution is fully automated. If the active limit order is not marketable it will post in the NYSE Arca Options Book.</p> <p>A stop limit order (elected or unelected) may be cancel/replaced to a regular market or limit order by sending a cancel/replace and specifying the new order type and limit price (if applicable). Once elected, a stop limit order may not be “re-stopped” via cancel/replace’. Any cancel/replace of an elected stop limit must either change the order type to regular market or limit, or keep the original order type and stop price and change only the limit price or quantity.</p>	Core
Reserve Order *Must use New Order Variant 3 (Verbose)	OrdType = 2 MaxFloor = (show size)	A reserve replenishes the displayed order size as executions are received, up to the total order quantity; away markets are routed at their quoted size or larger (if applicable) when hitting the bid or taking liquidity.	Core
IOC (immediate Or Cancel)	OrdType = 2 TimeInForce = 3	A limit order that is to be executed in whole or in part as soon as such order is received. The portion not so executed is to be treated as cancelled. IOC’s only execute on ArcaEx and do not route.	Core
Opening Only Order – Market	OrdType = 1 (Market) TimeInForce = 2 TradingSessions = 2	<p>Opening Only – Market orders are orders that are executable only within an auction.</p> <p>If the order is not executed in the auction, the balance is cancelled.</p>	Early Auction
Opening Only Order – Limit	OrdType = 2 (Limit) TimeInForce = 2 TradingSessions = 123	<p>Opening Only – Limit orders are orders that are executable only within an auction.</p> <p>The Opening Only Order – Limit is executable only during the <u>next</u> Auction following order entry (including Halt and IPO). If the order is not executed in the auction, the balance is cancelled.</p>	Early Auction
NOW order	OrdType = 2 TimeInForce = 3 ExecInst = 1	A limitorder that is executed in whole or in part that will be routed to one or more NOW recipients (those venues that respond immediately with a fill or a cancel) for immediate execution if the order cannot be executed on ArcaEx. Orders are immediately canceled if not executed at the quoted price or better.	Core

Order Type	Fields and Values	Description	Available Sessions
ISO Intermarket Sweep Order	ExecInst = f (Lower Case F) ISO Flag = Y TimeInForce = 3 (IOC)	<p>These orders execute against the fully displayed size of any Protected Bid or Offer (each exchange's best bid and best offer, or "BBO"). ISOs allow a large trade to fill against quotes priced worse than the NBBO while simultaneously meeting the requirement to sweep the top of the book at all eligible protected markets. A broker can sweep and then fill the remainder of an order, so long as simultaneous "ISO Orders" are sent out to trade against the protected quotes on away markets.</p> <p>ISO Orders will interact with all resting orders. ISO Orders are never routed out.</p>	Core
Add Liquidity Only (ALO)	OrdType = 2 ExecInst = 6 ExtendedExecInst = A	<p>The ALO Order is a limit order that is posted to the NYSE Arca book in order to add liquidity.</p> <p>The ALO Order is designed to assist traders in controlling their trading costs. By providing rather than removing liquidity, traders can limit or reduce take fees.</p> <p>The ALO order will be Day only, and may not be designated as IOC (Immediate or Cancel), Good Till Cancel (GTC) or Good Till Date (GTD).</p> <p>ALO Orders will be rejected where, at the time of entry:</p> <ul style="list-style-type: none"> - The ALO is marketable - The ALO will lock or cross the market 	Core
Re-pricing Add Liquidity Only (ALO)	OrdType = 2 TimeInForce = 0 ExecInst = 6 ExtendedExecInst = A Plus, must specify either with or without Display Price Update Acks: ExtendedPNP = S - without display price update Acks OR ExtendedPNP (9417) = A - WITH display price update Acks	<p>The ALO Order is a limit order that is posted to the book in order to add liquidity.</p> <p>The ALO Order is designed to assist traders in controlling their trading costs. By providing rather than removing liquidity, traders can limit or reduce take fees.</p> <p>The ALO order may be Day only, and may not be designated as IOC (Immediate or Cancel) or Good Till Cancel (GTC).</p> <p>If a Re-pricing ALO Order would lock local interest at or better than the NBBO, it will be assigned a working price and display price 1 MPV worse than the locking price.</p> <p>If a Re-pricing ALO Order would lock the NBBO with no local interest at that price, it will be assigned a working price at the contra-side NBBO and a display price 1 MPV worse than the locking price. If the NBBO improves to lock the display price of the Re-pricing ALO Order, the working price will update to the display price and the order will get a new priority timestamp.</p>	Core

Order Type	Fields and Values	Description	Available Sessions
Fill Or Kill	OrdType = 2 (Limit) TimeInForce = 4 (FOK)	A limit order that will only fill if the entire order quantity can be matched immediately. If not the order will be cancelled back to the client.	Core
All or None	ExecInst = G	Order that will only fill if the entire order quantity can be matched.	Core
Post No Preference Blind (PNP B) Order	Order Type = 2 ExecInst = 6 ExtendedPNP = B	The PNP B order is an undisplayed limit order priced at or through the PBBO, with a tradable price set at the contra side of the PBBO. When the PBBO moves away from the price of the PNP B and the prices continue to overlap, the limit price of the PNP B will remain undisplayed and its tradable price will be adjusted to the contra side of the PBBO. When the PBBO moves away from the price of the PNP B and the prices no longer overlap, the PNP B shall convert to a displayed PNP limit order. When the PBBO moves into the price of the PNP B, the tradable price of the PNP B will be adjusted to the contra side of the PBBO.	Core
PNP+ Complex Order	OrdType = 2 ExecInst = M	<p>PNP+ Complex orders are designed to provide the sender price improvement over the leg markets at the time of execution. Upon receipt, our matching engine will validate the price of a PNP+ Complex order against the leg markets and if the order is marketable against these leg markets or would post to the book at a price less than one MPV (minimum price variation) away from all of the leg markets, the order will price back one MPV from the derived (net price) BBO and post to the complex order book.</p> <p>PNP+ Complex orders will track the screen markets to both better and worse prices, always maintaining a one MPV buffer.</p> <ul style="list-style-type: none"> • If leg markets improve so a resting PNP+ Complex order is marketable against the legs, the PNP+ Complex order will price back one MPV and repost. • If the leg markets worsen, the PNP+ Complex order will repost at the more aggressive price, up/down to the net debit or credit price of the order, always remaining one MVP distance from the leg markets. • If an incoming marketable contra side PNP+Complex order is received, it will immediately trade against the posted order, as long as the execution price is at least 1 MPV away from either side of the complex BBO. 	-core
PNP Light Only Order	OrdType = 2 ExecInst = 6 ExtendedPNP = L	PNP LO orders are limit orders that do not route to away markets. Marketable incoming PNP LO orders will trade against any displayed interest and post remaining shares to the NYSE Arca book. PNP LO orders that lock or cross the National Best Bid and Offer (NBBO) will cancel back to the order sending firm. Incoming PNP LO orders will also cancel	-core

Order Type	Fields and Values	Description	Available Sessions
		<p>back to the order sending firm under the following conditions:</p> <p>If incoming PNP LO order is marketable against any non-displayed interest present in the NYSE Arca book, including resting PNP Blind (PNP B) orders and hidden portions of reserve orders. Once posted and disseminated, the PNP LO order will stand its ground, i.e. it will not route or cancel if locked/crossed by an away BBO.</p>	
Complex Order Auction (COA)	<u>New Order - Variant 4 Only</u> ExtendedExecInst = C	Any Complex Order marked for Complex Order Auction (COA) that meets COA parameters will generate an RFR (Request for Response) over XDP market data.	-core
Complex Order RFQ response	TimelnForce = 5 (GTX)	<p>A Complex order to be used in response to a COA RFQ.</p> <p>The Complex Order marked for auction will trade with contra orders after the RFR ends in a pro rata auction. Contra orders sent in response to RFR can be marked with TimelnForce = 5 which will expire at the conclusion of the auction.</p> <p>GTX orders that are entered on the same side as the initiating COA will be rejected.</p>	-core

7 NYSE American Options Order Types

Order Type	Fields and Values	Description	Available Sessions
Market Order	OrdType = 1 (market)	An order to buy or sell that is to be executed at the best price obtainable.	Core
Limit Order	OrdType = 2 (limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy/sell at or above/below the consolidated best offer/bid for the security.	Core
PNP (post no preference)	OrdType = 2 ExecInst = 6	A limit order to buy or sell that is to be executed in whole or in part on NYSE American Options. The portion not executed is posted in the NYSE American Options Book without routing any portion of the order to another market center. PNP orders that would lock or cross the NBBO are cancelled. **Note: PNP orders entered with Time in Force of IOC will be accepted, and will be handled as an IOC order – will never be posted to the book.	Core
Re-pricing Post No Preference (PNP)	OrdType = 2 TimeInForce = 0 (Day) ExecInst = 6 Plus, must specify either with or without Display Price Update Acks: ExtendedPNP = S - without Display Price Update Acks OR ExtendedPNP = A - WITH Display Price Update Acks	PNP orders are Limit Orders that are to be executed in whole or in part on NYSE Arca Options or NYSE American Options. Any portion not executed is posted to the book without routing any portion of the order to another exchange. When locking/crossing away markets, the Re-pricing PNP will display one MPV worse than the contra-side NBBO but have a working price equal to the contra-side NBBO. For description of Display Price Update Acks, see section, “Display Price Update Acknowledgement (Optional) - for Re-Pricing PNP & Re-Pricing ALO Orders.”	Core
Stop Order *Must use New Order Variant 3 (Verbose)	OrdType (40) = 3 (Stop) StopPx (99) = Stop Price	A Stop Order becomes an active Market Order when the stop price is reached. A Stop Order to buy is triggered when the option is bid on NYSE American or trades on NYSE American (or any exchange) at or above the specified stop price. A Stop Order to sell is activated when the option is offered on NYSE American or trades on NYSE American (or any exchange) at or below the specified stop price. Order execution is fully automated. A stop order (elected or unelected) may be cancel/replaced to a regular market or limit order by sending a cancel/replace and specifying the new order type and limit price (if applicable). Once elected, a stop order may not be “re-stopped” via cancel/replace.	Core

Order Type	Fields and Values	Description	Available Sessions
Stop Limit Order *Must use New Order Variant 3 (Verbose)	OrdType (40) = 3 (Stop) Price (44) = Limit Price StopPx (99) = Stop Limit Price	<p>A Stop Limit Order becomes an active Limit Order when the stop price is reached. A Stop Limit Order to buy is triggered when the option is bid or trades on NYSE American (or any exchange) at or above the specific stop price. A Stop Limit Order to sell becomes a Limit Order when the option is offered or trades on NYSE American (or any exchange) at or below the specified stop price. Order execution is fully automated. If the active limit order is not marketable it will post in the NYSE American Book.</p> <p>A stop limit order (elected or unelected) may be cancel/replaced to a regular market or limit order by sending a cancel/replace and specifying the new order type and limit price (if applicable). Once elected, a stop limit order may not be “re-stopped” via cancel/replace’. Any cancel/replace of an elected stop limit must either change the order type to regular market or limit, or keep the original order type and stop price and change only the limit price or quantity.</p>	Core
IOC (Immediate Or Cancel)	OrdType = 2 TimeInForce = 3	A limit order that is to be executed in whole or in part as soon as such order is received. The portion not so executed is to be treated as cancelled. IOC’s only execute on NYSE American Options and do not route.	Core
Opening Only Order – Market (“Market On Open/MOO”)	OrdType = 1 (Market) TimeInForce = 2 TradingSessions = 2	<p>Opening Only – Market orders are orders that are executable only within an auction.</p> <p>If the order is not executed in the auction, the balance is cancelled.</p>	Early Auction
Opening Only Order – Limit (“Limit On Open/LOO”)	OrdType = 2 (Limit) TimeInForce = 2 TradingSessions = 123	<p>Opening Only – Limit orders are orders that are executable only within an auction</p> <p>The Opening Only Order – Limit is executable only during the <u>next</u> Auction following order entry (including Halt and IPO). If the order is not executed in the auction, the balance is cancelled.</p>	Early Auction
NOW order	OrdType = 2 TimeInForce = 3 ExecInst = 1	A limit order that is executed in whole or in part that will be routed to one or more NOW recipients (those venues that respond immediately with a fill or a cancel) for immediate execution if the order cannot be executed on NYSE American Options. Orders are immediately canceled if not executed at the quoted price or better.	Core
Fill Or Kill	OrdType = 2 (Limit) TimeInForce = 4 (FOK)	A limit order that will only fill if the entire order quantity can be matched immediately. If not the order will be cancelled back to the client.	Core
All or None	ExecInst = G	Order that will only fill if the entire order quantity can be matched.	Core

Order Type	Fields and Values	Description	Available Sessions
ISO Intermarket Sweep Order	ExecInst = f (Lower Case F) ISO Flag = Y TimeInForce = 3 (IOC)	These orders execute against the fully displayed size of any Protected Bid or Offer (each exchange's best bid and best offer, or "BBO"). ISOs allow a large trade to fill against quotes priced worse than the NBBO while simultaneously meeting the requirement to sweep the top of the book at all eligible protected markets. A broker can sweep and then fill the remainder of an order, so long as simultaneous "ISO Orders" are sent out to trade against the protected quotes on away markets. ISO Orders will interact with all resting orders. ISO Orders are never routed out.	Core
Post No Preference Blind (PNP B) Order	OrdType = 2 ExecInst = 6 ExtendedPNP = B	The PNP B order is an PNP Order that if, at the time of entry, would lock or cross the protected quotation of an external market, will be priced to the current PBO (for bids) or to the current PBB (for offers) and displayed one minimum price variation below the current PBO (for bids) or above the current PBB (for offers). If the PBO (PBB) re-prices higher (lower), a PNP Blind order to buy (sell) is re-priced to the updated PBO (PBB) and re-displayed one MPV below (above) the updated PBO (PBB) until it reaches its limit price. If the PBO (PBB) re-prices to be equal to or lower (higher) than the last displayed price of a PNP Blind order to buy (sell), the PNP Blind order remains priced and displayed at its last displayed price. If the PBBO changes such that a PNP Blind order would not lock or cross the PBBO of an external market, the order will be displayed as a PNP limit order	Core
Complex Order Auction (COA)	<u>New Order - Variant 4 Only</u> ExtendedExecInst = C	Any Complex Order marked for Complex Order Auction (COA) that meets COA parameters will generate an RFR (Request for Response) over XDP market data.	-core
Complex Order RFQ response	TimeInForce = 5 (GTX)	A Complex order to be used in response to a COA RFQ. The Complex Order marked for auction will trade with contra orders after the RFR ends in a pro rata auction. Contra orders sent in response to RFR can be marked with TimeInForce = 5 which will expire at the conclusion of the auction. GTX orders that are entered on the same side as the initiating COA will be rejected.	-core
Directed Order	OrdType = 2 DeliverToCompID = MMID or ATPID of the MarketMaker	Directed orders are orders sent by Order Sending firms. These orders are designed to interact with quotes and orders that are entered by Market Makers. Firms that enter directed orders can specify the MMID or ATPID of the	Core

Order Type	Fields and Values	Description	Available Sessions
		market maker that they would like to deliver their directed order to in the DeliverToCompID field.	

Appendix A: Liquidity Indicator Values and Definitions (NYSE Arca & NYSE American Options)

Description	LiquidityIndicator Field	LastMkt Field
Execution - Added Liquidity (Arca Options)	A	PO
Execution - Removed Liquidity (Arca Options)	R	PO
Execution - Opening Auction – Neutral (Arca Options)	O	PO
Execution - BOLD Added Liquidity (Arca Options)	P	PO
Execution - BOLD Removed Liquidity (Arca Options)	F	PO
Execution - Routed Away (Arca Options)	X	PO
Execution - Added Liquidity (NYSE American Options)	A	AO
Execution - Removed Liquidity (NYSE American Options)	R	AO
Execution - Opening Auction – Neutral (NYSE American Options)	O	AO
Execution - BOLD Added Liquidity (NYSE American Options)	P	AO
Execution - BOLD Removed Liquidity (NYSE American Options)	F	AO
Execution - Routed Away (NYSE American Options)	X	AO

NYSE Arca & NYSE American Options - Routed Away Market Definitions (Verbose Indicators) (Message 2, Variant 2)

Description	LiquidityIndicator Field	ExecBroker Field	Away Market
Execution - Routed Away (Arca Options)	X	BOX	Boston OE
Execution - Routed Away (Arca Options)	X	CBO	CBOE
Execution - Routed Away (Arca Options)	X	ISX	NASDAQ ISE
Execution - Routed Away (Arca Options)	X	NDQ	NASDAQ
Execution - Routed Away (Arca Options)	X	PHO	NASDAQ PHLX
Execution - Routed Away (Arca Options)	X	ASE	NYSE American
Execution - Routed Away (Arca Options)	X	BATS	CBOE BZX Options
Execution - Routed Away (Arca Options)	X	CB2	CBOE (C2)
Execution - Routed Away (Arca Options)	X	NASD	NASDAQ BX
Execution - Routed Away (Arca Options)	X	MIAX	MIAX Options
Execution - Routed Away (Arca Options)	X	ISE2	NASDAQ GEMX (Gemini)
Execution - Routed Away (Arca Options)	X	EDGO	CBOE EDGX Options
Execution - Routed Away (Arca Options)	X	MRCY	NASDAQ MRX (Mercury)
Execution - Routed Away (Arca Options)	X	MPRL	MIAX Pearl
Execution - Routed Away (Arca Options)	X	EMLD	MIAX Emerald

Description	LiquidityIndicator Field	ExecBroker Field	Away Market
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Execution - Routed Away (NYSE American Options)	X	BOX	Boston OE
Execution - Routed Away (NYSE American Options)	X	CBO	CBOE
Execution - Routed Away (NYSE American Options)	X	ISX	NASDAQ ISE
Execution - Routed Away (NYSE American Options)	X	NDQ	NASDAQ
Execution - Routed Away (NYSE American Options)	X	PHO	NASDAQ PHLX
Execution - Routed Away (NYSE American Options)	X	NYO	NYSE Arca
Execution - Routed Away (NYSE American Options)	X	BATS	CBOE BZX Options
Execution - Routed Away (NYSE American Options)	X	CB2	CBOE (C2)
Execution - Routed Away (NYSE American Options)	X	NASD	NASDAQ BX
Execution - Routed Away (NYSE American Options)	X	MIAX	MIAX Options
Execution - Routed Away (NYSE American Options)	X	ISE2	NASDAQ GEMX (Gemini)
Execution - Routed Away (NYSE American Options)	X	EDGO	CBOE EDGX Options
Execution - Routed Away (NYSE American Options)	X	MRCY	NASDAQ MRX (Mercury)
Execution - Routed Away (NYSE American Options)	X	MPRL	MIAX Pearl
Execution - Routed Away (NYSE American Options)	X	EMLD	MIAX Emerald

Appendix B: Reject Codes

Reject Number	Name	Description
0	Success	No Reject
1	System unavailable	The Trading System is not available.
2	Invalid Sequence Number	The Last Sequence Number in a Logon message is larger than expected.
3	Client Session Already Exists	A user attempted to login more than once and the existing client session is still active. Only one client session is supported per user.
4	Client Session Disabled	The user attempted to reconnect to a client session that has been disabled.
5	Connection Type	The configured connection type of a session does not match the port the client connects to.
10	Invalid IP Address	User is attempting to logon from a Source IP that is not permitted

Appendix C: Exchange Destinations (ExDestination)

ExDestination	Description
103	NYSE Arca Options
104	NYSE NYSE American Options

Document Control

Date	Revision	Synopsis of Change
4/25/2012	4.1a	Initial Document
5/5/2012	4.1b	Added conditional Liquidity Indicator on small ack message and Verbose Execution Report Message, (Liquidity Indicator (9730) = 1 (Candidate for Liquidity Indicator “S”) (Sent on Verbose Order Ack, Cancel pending, Cancelled, C/R Pending, and Replaced) Added Liquidity Indicator “S” = Set Inside Price and Added Liquidity on ARCA
8/3/2012	4.1c	Added Differences between 4.1 and prior versions section to specification Added NASD as an away Market for Options Updated Liquidity Indicator Field in STP Cancel (Message 4, Variant 2)
8/13/2012	4.1d	Updated byte size of G3 Fast Cancel/Replace Message for Options from 72 to 80
9/10/2012	4.1e	Updated Risk Mitigation for Options – Page 76 Added PL Select Order Type for Equities
12/4/2012	4.1f	Added Session Throttle Information (Page 21) Added MIAX and ISE2 to Routed Out Values for Arca/Amex Options (Execution Report Message 2.2 Page 62 and Appendix B).
1/3/2013	4.1g	Updated Order Type Information - Added Market To Limit (MTL) to Order Types Section, Added Proactive If Locked option to MPL/MPL ALO Orders LU/LD Changes added (Proactive If Locked Field added, new values added – Currently Unavailable). Added Default Proactive if Locked to Logon Variant 2. Added PNP Blind Indicator Values to conditional Liquidity Indicator on small ack message and Verbose Execution Report Message, (Sent on Verbose Order Ack, Cancel pending, Cancelled, C/R Pending, and Replaced)

Date	Revision	Synopsis of Change
4/10/2013	4.1h	Adjusted Differences between 4.0 and 4.1 on page 6 – Added ArcaExID differences, added UGW ExDestination Field Notes. Added ExDestination note for UGW for the strict enforcement of the proper value in D.1, D.2, and D.3 Messages.
5/20/2013	4.1i	Added NYSE Arca Equities Retail Order Information (Page 11) Corrected Risk Mitigation Alert Message 7.1 (Page 94) – Removed CompanyGroupID Field (5 Bytes) and added 5 Bytes to the Filler.
7/22/2013	4.1j	Added NYSE Arca Equities Retail Order Types (Page 104) Updated Complex Order Auction (COA) information in Arca and Amex Options Order Types
9/3/2013	4.1k	Updated Risk Mitigation Section (Page 93) with Global Risk Reject Notes.
10/1/2013	4.1l	Updated Equities Tracking Order description and Order type Updated Bulk Cancel Message section to include more information (Page 13)
10/28/2013	4.1m	Added new Complex Messages (Available in Q1 2014): D.5 - Complex Order using complex symbol B.3 - Complex Cross order using complex symbol F.2 – Complex Order Cancel using complex symbol G.5 - Complex order Cancel/Replace (with leg definition) G.6 - Complex order Cancel/Replace using complex symbol G.7 - Complex order Fast Cancel/Replace using complex symbol R.1 - New Complex Symbol Request r.1 - New Complex Symbol Updated Equities PNP Blind order type description
12/2/2013	4.1n	Updated timestamp section on differences page (Page 6). Updated G.5, G.6, B.3, and R.1 Complex Messages.
4/21/2014	4.1o	Updated r.1 Complex Request Ack Message.
6/25/2014	4.1p	Updated LegRefID field in complex messages. Value cannot be 0.
7/18/2014	4.1q	Added note to DisplayRange Field (Page 40) Corrected fields in Random Reserve Order Type (Page 113)

Date	Revision	Synopsis of Change
12/19/2014	4.2	<p>Updated Options Cancel on Disconnection Functionality to always subscribe to this service.</p> <p>Removed details for the following order types:</p> <ul style="list-style-type: none"> - Auction Only Order - Market to Limit Order/Market IOC/Market NOW - Midpoint Cross - ISO PNP Cross/ISO PNP IOC Cross - Cross and Post - Portfolio Crossing Session (PCS) - Discretionary Limit Orders - Passive Discretionary with Reserve - Sweep Reserve/Sweep Reserve with Discretion - Inside Limit Sweep Reserve - Random Reserve - Reserve NOW - PL Select - MPL FOK
3/9/2015	4.3	<p>Detail added to indicate that FOK is valid only on Limit orders.</p> <p>Added detail regarding heartbeat intervals (page 29).</p> <p>Added detail on Minimum Order Size and Exposure Time for CUBE orders (page 98).</p> <p>Updated details of “Customer or Firm” field to indicate that “Professional Customer” is now valid for both NYSE Arca and NYSE Amex Options.</p> <p>Removed Passive Discretion order details.</p>

Date	Revision	Synopsis of Change
6/8/2015	4.4	<p>Added Section 2, “Pillar Trading Platform for NYSE Arca Equities”</p> <p>Added notes on binary field and value changes to be expected for symbols migrated to Pillar throughout the equities sections of the spec</p> <p>Added Appendix E, “Pillar Reason Codes”</p> <p>Removed details for the following equities order types:</p> <ul style="list-style-type: none"> - Primary Sweep (PSO) - Primary Sweep + Ship (PSOS) - Reserve Orders with IOC Modifiers <ul style="list-style-type: none"> o Limit Reserve IOC o ISO PNP Reserve IOC o PNP Reserve IOC - Inside Limit IOC - ALO PNPB Reserve
11/9/2015	4.5	<p>Added note that any Price on incoming Orders, Cancel Requests, and Cancel/Replace Requests with significant digits in the 5th decimal or beyond will cause the message to be rejected by the gateway.</p>
2/22/2016	4.6	<p>Clarification on meaning of Proactive if Locked values and applicability as “non-display remove liquidity” instruction for MPL orders</p> <p>Clarification on STP functionality for PNP orders</p> <p>Updated Pillar reason codes (Appendix E)</p>
3/24/2016	4.7	<p>Added support for Bulk Cancel by TPID request for NYSE Amex and NYSE Arca Options (Section 3 – Order Management).</p> <p>Added support for upcoming enhancements to Risk Mitigation functionality for NYSE Amex and NYSE Arca Options (Section 6 – Risk Mitigation – Options).</p> <p>Added 'Order Reject Reason' value '7' (reject due to Options Risk Mitigation breach) to Execution Report Verbose Format, Variant 2 (Section 5 – Application Messages).</p>
7/15/2016	4.8	<p>Added ExecInst = y to designate Trade-at ISO order</p> <p>Updated list of Order Capacity values</p>
8/25/2016	4.9	<p>Added codes R154 – R158 in Appendix E: Pillar Reason Codes.</p>

Date	Revision	Synopsis of Change
2/23/2017	5.0	<p>Added support for NYSE Amex and NYSE Arca Options Broadcast Order Liquidity Delivery (“BOLD”) Mechanism; new values in ExtendedExecInst and LiquidityIndicator.</p> <p>Added value to ExecBroker field for MIAX Pearl.</p> <p>Removed support for Side ‘S’ (Sell Short and Cancel).</p> <p>Added new sub-section, “NYSE Pillar Risk Mitigation” (Section 3; Order Management – Automatic Order Cancellation on Disconnect).</p> <p>Added code R168 – Pillar Risk Mitigation (Appendix E: Pillar Reason Codes).</p>
4/11/2017	5.1	Rebranding for Broadcast Order Liquidity Delivery (“BOLD”) Mechanism.
8/16/2017	5.2	<p>Updated description of ‘ArcaExID’ field to indicate that the identifier is now unique per Exchange, per day (new for NYSE Arca/American Options), on the following message types – Order fill message (variant 1); Execution Report Verbose Format (variant 2); Complex Execution Report Format (variant 3); Options Cross Execution Report (variant 4).</p> <p>Updated description of ‘ExecID’ field on Allocation message (Message Type = J), to indicate that this field now must be populated with the ArcaExID from the original transaction, and NOT the ExecID from the original transaction.</p> <p>Rebranding for NYSE American Options (formerly NYSE Amex Options).</p>
10/9/2017	5.3	<p>Updated sub-section “NYSE Arca/American Options Self Trade Prevention Information” under “Order Management.”</p> <p>Added support for Options Market Maker self-trade prevention types Cancel New, Old, and Both (New Order Message variants 2 and 3).</p> <p>Added support for new Options Risk Mitigation Types that exclude IOC orders (Risk Mitigation Request, Risk Mitigation Request Ack, Risk Mitigation Alert).</p>
1/30/2018	5.4	Added support for Complex CUBE in Order Cross – Complex, Variant 2 and 3 messages.
5/2/2018	5.5	Updated order acceptance time for NYSE Arca Options and NYSE American Options in section “Hours of Operation.”

Date	Revision	Synopsis of Change
10/1/2018	6.0	<p>Added support for Re-Pricing PNP & Re-Pricing ALO Orders:</p> <ul style="list-style-type: none"> - New ExtendedPNP values on New Order Single - New sub-section "Display Price Update Acknowledgement (Optional)" - for Re-Pricing PNP & Re-Pricing ALO Orders"; new Execution Type for "unsolicited" on Execution Report - Verbose Format (Variant 2) - New entries for "Re-pricing Add Liquidity Only (ALO)" & "Re-pricing Post No Preference (PNP)" in sub-sections "NYSE Arca Options Order Types" and "NYSE American Options Order Types" <p>Removed all equities functionality in support of NYSE Arca Equities customer migrations away from this gateway and onto the NYSE Pillar Gateway. Note that going forward, this specification will only serve customers of NYSE Arca & American Options.</p>
3/27/2019	6.1	<p>Updated description for the following fields - ClearingFirm; ClearingAccount.</p> <p>Order Cross Complex, variants 2 and 3 - clarification of Min and Max Price.</p>
5/22/2019	6.2	<p>Added sub-section for "Give-Up Functionality" under "Order Management" Section, detailing how to use Give-Up functionality by identifying a Give-Up subaccount in the ClearingAccount field.</p> <p>Updated Risk Mitigation Alert details to more accurately reflect current production behavior.</p>
12/9/2019	6.3	<p>Updated order type descriptions for stop and stop limit orders to include new cancel/replace functionality allowing unelected stop/stop limit orders to be replaced with market/limit orders.</p> <p>Updated details of allocation message (msg type = J) to more clearly reflect current behavior.</p>
2/27/2020	6.4	Clarification of ASCII characters support for free form text fields.
9/8/2020	6.5	Addition of AON CUBE Solicitation
4/14/2022	6.6	<p>CUBE timers have been changed to a random timer between 100-105 milliseconds.</p> <p>Live order retention support has been removed.</p>